



inDICES

Measuring the Impact of Digital Culture

Deliverable 3.2

Guidelines for CHIs Digital Transformation



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D3.2 – Guidelines for CHIs Digital Transformation

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Executive Summary

This document presents digital transformation guidelines for cultural heritage institutions (CHIs). They situate digital transformation in the context of opening up GLAM collections, inspired by the work at [Europeana Foundation](#), [the Europeana Aggregators' Forum](#) and [the Europeana Network Association](#). They are based on an in-depth review of the state-of-the-art in self-assessment instruments for heritage institutions, of which the inDICEs self-assessment tool is a further evolution, taken on board insights and lessons learned from the COVID-19 crisis.

The proposed guidelines are centered around four themes: Digital Trends & Participatory Culture, IPR for Cultural Heritage, Strategic Skills, Collaborations and organisation growth, and Approaching Innovation and Digital Strategies. As a whole, they offer the right mix of ingredients for developing digital strategies in CHIs.

In the section on “Embracing Digital trends and Participatory Culture”, the importance of the shift in cultural production due to creative exchanges in the digital sphere are highlighted, and CH institutions are encouraged to take up an active role, to monitor digital trends and exploit the powers of social media and participatory practices. However, while copyright laws, deeply rooted in pre-digital practices, prove still to be a major headache for CH institutions willing to operate in the digital sphere, the section on “Empowering IPR for Cultural Heritage” offers a step by step guide on how to turn digital collections into operable assets. In “Invigorating Collaborations & Organisational Growth” the guidelines provide insights into how to build the capacity to improve impact, detailing some useful tools for skills development. It stresses the importance for CH institutions to join networks and share expertise, and goes deeper in the development of appropriate value creation chains that can underpin future-proof CH business models. In “Approaching Innovation and Digital Strategies”, the guidelines focus on the value of innovation, embedded in comprehensive digital strategy development. The guidelines end with a short description of two digital tools developed in the context of inDICEs that showcase key aspects, the monitoring environment as part of the observatory and the participatory space.

These guidelines go hand-in-hand with the inDICEs [Open Observatory](#) and specifically the Self-Assessment Tool, which will enable institutions to continuously assess and adjust their activities. Additionally, an instructional Open Online Course (MOOC) will be developed to train professionals in optimal use of the tools to develop and sustain an effective digital strategy for their organisation.

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1. Introduction

The COVID-19 crisis accelerated the push for cultural heritage institutions (CHIs) to strengthen their digital presence and agency. For many, the website and social media were suddenly the only spaces left to engage with their audiences. In many cases, this made them scramble to transform digital catalogues into attractive online user experiences such as virtual exhibitions and galleries, 3D animations and digital stories.

But it also brought home an awakening to a dire reality: in many cases, digitisation efforts had not been aligned with curatorial needs, digitised contents proved unusable due to copyright restrictions, and novel demo applications proved hard to maintain. The main focus was put on how the digitisation of cultural heritage would add to different sectors, without consideration for what digitisation means as a transition of the whole organisation. The much needed organisational change to incorporate digitisation as a transversal aspect of the functioning of museums was often neglected.

It must be acknowledged, however, that this was not all due to a lack of foresight at the institutional level. Digitisation of the European Cultural Heritage sector has been a rocky road, often following agendas and priorities disingenuous to their core mission, such as the promotion of a digital economy or stimulating tourism. While culture is the prerogative of the member states, the freedom of action at the European level is rather limited. This explains why most of the actual funding came from ICT budgets managed outside of DG Culture programme.

Coordinated efforts on digitisation started in the 21st century with programmes such as E-TEN¹ and eContentplus², in which the first Europeana project would see the light as successor to EDLNet³ as well as the setup of the Michael Culture network⁴. The main stimulus for digitisation, however, came with the European Commission recommendation of 27 October 2011 on the digitisation and online accessibility of cultural material and digital preservation⁵, where a very ambitious plan was laid out to digitise Europe's heritage collections. Subsequent funding calls were issued such as the Competitiveness and Innovation Framework Programme (CIP)⁶ and the Connecting Europe Facilities (CEF)⁷, as well as the Creative Europe Programme. In the 2015-2017, the progress report "on Cultural Heritage: digitisation, Online Accessibility and Digital Preservation"⁸, it was stated that most member states had deployed a national digital strategy.

¹ <https://digital-strategy.ec.europa.eu/en/news/eten-programme>

² <https://ec.europa.eu/digital-single-market/en/news/information-day-econtentplus-programme>

³ <https://www.eesc.europa.eu/en/news-media/presentations/european-digital-library-cenl-edl-edlnet>

⁴ <http://www.michael-culture.eu/about>

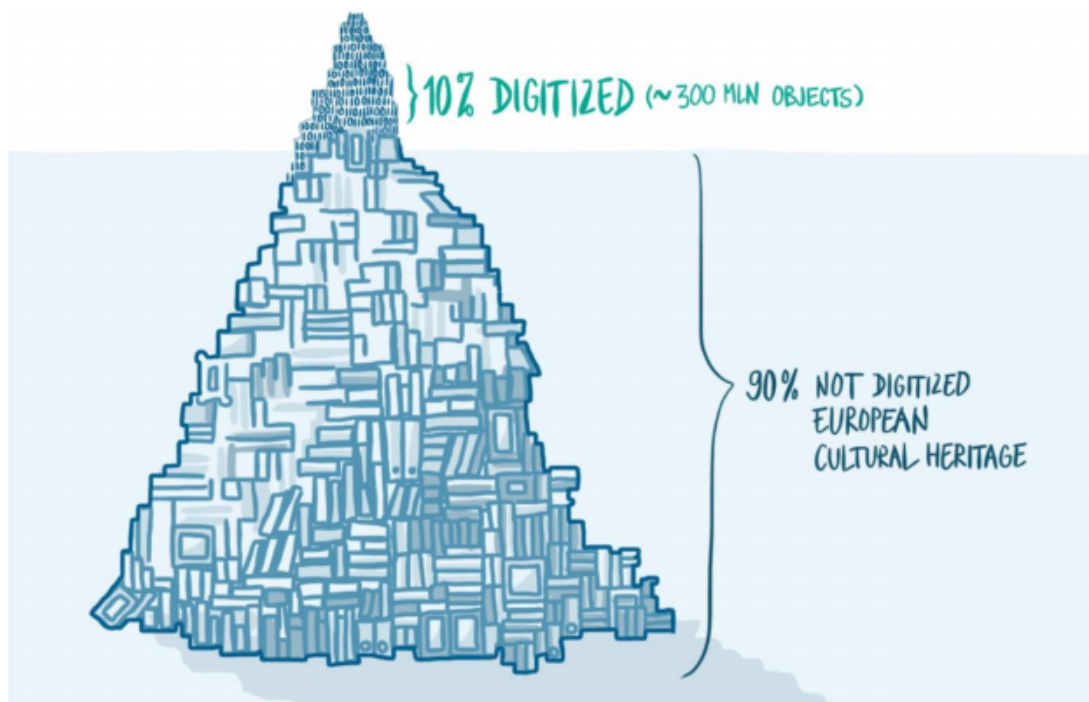
⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011H0711&from=EN>

⁶ <https://ec.europa.eu/cip/>

⁷ <https://ec.europa.eu/inea/en/connecting-europe-facility>

⁸ https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=60045

However, as noted in the Europeana Common Culture recommendations⁹, not all member states and regions have such a policy, let alone the required funding to actually reach the set digitisation goals, and since 2015, when it was estimated that only about 10% of Europe’s relevant heritage collections could be considered “digitised”, not much progress has been made.



90% of our heritage has not yet been digitized. This digitally available 10% represents 300 million objects, only one third of which (34%) is currently available online, with barely 3% of that works suitable for real creative re-use. Visual: Elco van Staveneren, www.denkschets.nl, CC BY-SA.

But what really has changed, is the notion of what we consider “digitisation”. That is no longer simply considered to be the scanning of heritage collections. More and more, the concept “digitalisation” is used to denote a much broader activity, which encompasses a digital approach to the whole digital workflow and the transformation of core CHI processes to adapt them to the digital world.¹⁰

These guidelines are the result of work in the different work packages of inDICEs, bringing together experts from various networks, institutions and service providers in the CH sector. It covers areas such as digital strategies, assessment, social media integration, Intellectual Property Rights, networking and collaboration, value chains and participatory practices. It relies as well on existing literature, previous expertise and best practices, as on new data collection and research.

⁹

https://pro.europeana.eu/files/Europeana_Professional/Projectpartner/EuropeanaCommonCultureProjectFiles/Recommendations%20for%20a%20European%20Member%20States%20and%20Commission%20supported%20digital%20aggregation%20strategy.pdf

¹⁰ Rijswijk, Kelly, W. Bulten, L. W. A. Klerkx, L. S. den Dulk, Joost Dessen, Lies Debruyne, and OT Team Economie en Nematoden. 2020. “Digital Transformation: Ongoing digitisation and Digitalisation Processes.”

The goal of these guidelines and the Self-Assessment Tool (that is being created as part of the inDICES project) is to support CHIs in assessing their readiness-to-market and their potential in the new digital era, allowing them to estimate benefits, challenges and advantages of such development, by taking into account insights on Digital Trends & Participatory Culture, IPR for Cultural Heritage, Strategic Skills, Collaborations and organisation growth and Innovation.

With this document, we aim to reach the following objectives:

- Help decision-makers at CHIs to understand the many meanings and ramifications of Digital Transformation;
- Explain the need for better digitalisation performance data in the CH sector and argue for the value of assessing trends, self-monitoring and assessment;
- Discuss the concept of the inDICES Self-Assessment Tool which is designed to support CHIs in such self-assessment and monitoring activities;
- Provide guidelines for defining digitalisation strategies in CHIs¹¹ on the basis of research done by inDICES project partners in the first half of the project, combining expertise on participatory digital culture, legal and policy frameworks, impact assessment, and innovation. Additionally, further input was gathered during two inDICES consultation workshops with CH professionals, policy-makers and researchers.

This document provides the first version of the guidelines for CHIs digital transformation. The final version will be available at the end of the project after further consultation with CHIs, and made available via the self-assessment tool and the inDICES online course.

2. Defining Digital Transformation

Digital Transformation is a term that is used in different ways by different people in different sectors. There is no one agreed definition in the cultural or cultural heritage sector, despite the term being part of sector conversations since at least 2012.¹² As a leading initiative in the cultural heritage sector with a predominant focus on digital cultural heritage, Europeana recently made a significant contribution to this debate, and the experience resulting from it is shared within inDICES too and is used to fulfil its purpose. In 2020, the Europeana Foundation commissioned Culture24 to, among other research goals, clarify how digital transformation and other related terms are understood in the sector.¹³ The report stopped short of proposing one definition. Europeana Foundation then, together with the Europeana Network Association and Europeana Aggregators' Forum, undertook a consultative exercise over several months and many iterations to arrive at an agreed working definition of digital transformation.¹⁴ Without a definition, there was a lack of clear thinking about how capacity building related to and delivered digital transformation. There was confusion around what the 'goal' looked like and what impact it created for society and the economy. Without clarity in

¹¹ This document provides the first version of the guidelines. The final version will be available at the end of the project after further consultation with CHIs, and made available via the self-assessment tool and the inDICES online course on digital transformation.

¹² See, for example, this Europeana Pro article by Nick Poole, former chair of the Europeana Network <https://pro.europeana.eu/post/europeana-inside-culture-is-a-right>

¹³ The report can be downloaded from Europeana Pro <https://pro.europeana.eu/post/the-digital-transformation-agenda-and-glams-culture24-findings-and-outcomes>

¹⁴ Read more about the process in this blog on Europeana Pro <https://pro.europeana.eu/post/defining-digital-transformation-for-the-cultural-heritage-sector>

these areas, it was difficult to set a direction and to set out how the impact of capacity building efforts would be measured.

The first working definition was agreed as follows:

“Digital transformation is both the process and the result of using digital technology to transform how an organisation works. It helps an organisation to thrive, fulfil its mission and meet the needs of its stakeholders.

Digital transformation can be driven by heritage professionals of any level - everyone can be an agent of change. It is not just about technology - it’s about mindsets and personal capabilities.

The impact of digital transformation will be different for each individual organisation. Each change, no matter how small, contributes to a cultural heritage sector powered by digital and a Europe powered by culture.”¹⁵

The approach behind this definition can prove to be significant for several reasons. First, the definition is a working definition. The world and the work of heritage institutions is not static, and so our understanding of what digital transformation is likely to change over time. Secondly, the breadth of this definition allows an understanding that digital transformation is both a(n ongoing) process and a result, that is, an activity as well as the goal. Thirdly, it is inclusive of all CHIs, as it emphasises change of any scale or size has value in the digital transformation journey. Finally, by focussing on the digital discovery of cultural heritage collections¹⁶, it implicitly reminds us that digital transformation occurs across an organisation’s work (e.g. from smart buildings to communications). While these guidelines are focused on digital transformation relating to digital collections, many of its components can have relevance in other areas.

3. State of the Art in Assessment and Monitoring Strategies

Since the conception of the inDICEs project, numerous online assessment and monitoring tools have been developed to support CHIs in their digital transformation. This is a result of a policy-driven trend in the cultural and creative sector for institutions to measure and demonstrate their performance as well as assess their capacity for digital transformation, especially for the purposes of securing public and private funding¹⁷. The questions and guidance that these self-assessment tools

¹⁵ Read more about digital transformation, Europeana’s focus on the digital discovery of cultural heritage collections and Europeana’s work on capacity building on Europeana Pro <https://pro.europeana.eu/page/building-digital-capacity#step-2-defining-digital-transformation>

¹⁶ See the full definition on Europeana Pro <https://pro.europeana.eu/page/building-digital-capacity#step-2-defining-digital-transformation>

¹⁷ See eg. Terras, Melissa, Stephen Coleman, Steven Drost, Chris Elsdon, Ingi Helgason, Susan Lechelt, Nicola Osborne, et al. ‘The Value of Mass-digitised Cultural Heritage Content in Creative Contexts’. *Big Data & Society* 8, no. 1 (1 January 2021): 20539517211006164. <https://doi.org/10.1177/20539517211006165>. and Devoldere, Isabelle, Jean-François Romainville, Steven Knotter, e.a.. ‘Mapping the Creative Value Chains : A Study on the Economy of Culture in the Digital Age : Final Report.’ Website. Publications Office of the European Union, 30 May 2017.

offer, provide a good indication of what is perceived as digital transformation in the heritage sector and how institutions are encouraged to translate it into concrete digital strategies.

The following section provides a comparative analysis of the assessment and guidance that these tools offer.¹⁸ The goal of this analysis is to identify gaps in the currently used frameworks for adopting and monitoring digital strategies. Specifically, we examine four tools that are commonly known and used in Europe¹⁹:

- Tracker²⁰
- Digitale Maturiteit²¹
- Quick Innovation Scan used by the DEN Academy²²
- Microsoft's Digital Transformation Framework²³

Questions and focus areas. All the tools start by asking users to fill out a survey of varying length and detail. For instance, the Tracker poses 93 questions divided into 12 areas that cover all operations of a heritage organisation, including Strategy & Governance, Marketing & Communications, HR, IT, Fundraising & Development, and Finance & Operations. In comparison, Microsoft's Digital Transformation Framework for libraries and museums takes a high-level approach and uses 16 questions to assess digital transformation across four areas: Enhanced Visitor Experience, Advanced Discovery, Dynamic Operations and Intelligent Environments. While the Tracker offers a more comprehensive overview, the approach used by Microsoft is more appealing as it is mission-driven and asks users to consider how various operational activities might come together in order to support those missions.

Evaluation. A scoring system is used across all tools to present the results of the survey. Digitale Maturiteit uses a percentage from 1-100 to assess the digital maturity of each organisation. Users are given a ranking in each category and can compare their performance with other organisations. Similarly, the Quick Innovation Scan used in the DEN Academy asks users to calculate their score out of a maximum of 20 points in four categories and to compare their results to a static chart. Both the Tracker and Digital Transformation Framework asks users to rate their current level of digital maturity and define their target goals.

The risk with the use of scoring systems is that it presupposes that digital transformation looks the same in each organisation. It does not take into account the diversity of CHIs and the different paths available to them in order to reach digital maturity. This can be particularly discouraging for smaller organisations that target niche communities and do not see the need to offer the same services as internationally established CHIs. For example, it might not be a priority for a rural museum to have its

<http://op.europa.eu/en/publication-detail/-/publication/4737f41d-45ac-11e7-aea8-01aa75ed71a1/language-en/format-PDF>.

¹⁸ See (forthcoming) Bocyte, R., Oomen, J. and Truyen, F. (2021). Self-Assessment and Monitoring of CHI Performance in Digital Transformation. In Proceedings of the 25th International Conference on Theory and Practice of Digital Libraries.

¹⁹ Collections Trust also offers a downloadable benchmark tool to Spectrum users which is based on ENUMERATE: <https://collectionstrust.org.uk/resource/digital-benchmarks-for-the-culture-sector/>

²⁰ <https://digitalculturecompass.org.uk/using-the-tracker/>

²¹ <https://www.digitalematuriteit.be/>

²² <https://www.den.nl/den-academie>

²³ <https://edujourney.microsoft.com/lam/>

entire collections digitised and available for wide audiences since they would rather focus on using digital strategies and methods to increase engagement with their local community.

Guidance. All the examined tools provide insight into the status quo in an organisation but do not offer concrete suggestions for follow up actions, hence their applicability is limited. For example, the Quick Innovation Scan offers generic guidelines such as “Seek opportunities to find collaboration partners inside and outside the organisation to gain new knowledge and find new solutions”. This can be useful to initiate a conversation about the necessary changes but more specific pointers are needed to ensure that appropriate measures and decisions are taken to achieve the envisioned targets. Especially, all the tools are lacking in the use of resources and knowledge already available in the sector which can be reached through engagement with existing CHI networks and individual organisations.

The Digital Transformation Framework gives very specific examples to describe each level of digital maturity that CHIs should strive for. For instance, one of the advanced levels in the Advanced Discovery area is "Computer vision and optical character recognition automatically generate additional metadata for real-time tagging". Such descriptions make this framework only applicable for very specific cases and provide a snapshot of the state of the art technology. Again, such strict classification creates a false impression that all CHIs need to reach the same and specific goals and targets in order to succeed.

4. The inDICES CHI Self-Assessment Tool Concept

Building on the state of the art analysis, the inDICES Self-Assessment Tool (SAT) is conceived as an interactive environment where CH professionals can collaboratively learn how to convert digital ambitions into digital strategies and gather data to continuously monitor their performance. The concept of the tool visualised in Figure 1 presents its four components to the current state of its development:

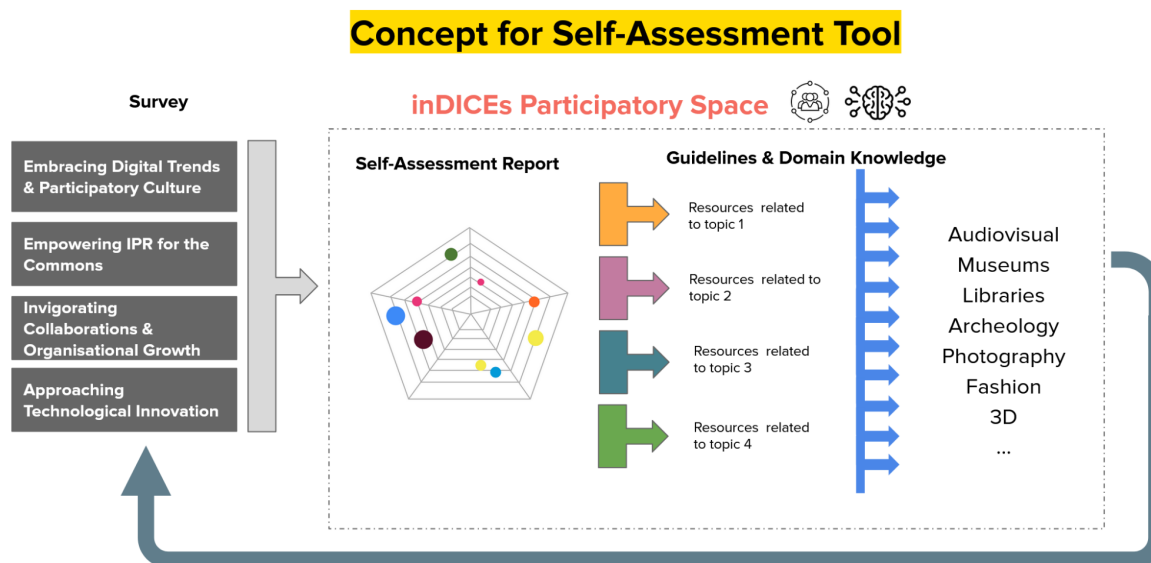


Fig. 1. CHI Self-Assessment Tool concept.

- **Survey** - composed of two parts: (1) general questions about their organisation (size, target audiences, participation in (inter)national networks, priorities, mission, etc.) which help to situate each CHI in a specific context and domain, and (2) Likert scale questions to assess an organisation's confidence with four aspects of digital transformation defined by inDICES which are the basis of the guidelines that are the focus of this document (see Section 5);
- **Self-Assessment Report** - data visualisations that showcase each CHI in relation to other organisations in the sector as well as focus on a particular domain or region/country. It is important to note that the report is not meant to give a rating or a grade on each question but rather highlight areas of high potential where further investment could lead to significant improvements based on each organisation's mission and priorities;
- **Guidance and Domain Knowledge** - strategic guidelines as well as targeted, domain-specific resources to support digital transformation processes grouped around the four areas introduced in the survey. The first version of these strategic guidelines are presented in Sections 5.1-5.4;
- **Participatory Space** - SAT is embedded in the inDICES Participatory Space that facilitates active engagement and knowledge sharing between CH professionals on topics related to digital transformation. It is specifically designed to engage participants in debates, brainstorming and community building activities.

Unlike other self-assessment tools, SAT is meant to be used iteratively. Users receive notifications as new relevant resources are added and are encouraged to update the survey answer at regular intervals. Time-series data is used to visualise progress over time. Importantly, the SAT serves not only individual CHIs but also policy-makers who require monitoring tools to implement effective policies and capacity building activities. Using the results of the SAT, policy-makers can monitor the effectiveness of their instruments over time and adjust them based on the self-assessments provided by the CHIs.

5. Guidelines for CHI Digital Transformation

Responding to Europeana's definition of digital transformation presented in Section 2, the following guidelines present a value-driven approach. Instead of approaching the process of digital transformation from a technological perspective, inDICES proposes to consider how digitalisation could enable CHIs to fulfil their missions and adapt to the needs of 21st-century societies. Specifically, we defined four areas of activities that would support this vision:

- **Embracing Digital Trends & Participatory Culture** - better understanding target audiences, responding to their changing needs and considering them as co-creators;
- **Empowering IPR for the Commons** - transitioning from gatekeepers to gate openers. Enabling critique, creativity and reinterpretation to support the creation of new knowledge;
- **Invigorating Collaborations & organisational Growth** - seeking interdisciplinary collaborations and acquiring new skills to support value delivery;

- **Approaching Innovation and Digital Strategies** - understanding the rationale for innovation in the CH sector and how it has a place in setting up digital strategies.

In the following sections we present each area in detail.

5.1. Embracing Digital Trends & Participatory Culture

The main and most revolutionary effect that the digital had on culture has been the immediate and (apparently) swift breaking down of the barrier between creators and the public. Thanks to digital technologies, today anyone is able to produce content, and therefore production no longer takes place within a hierarchical, vertical, and elitist logic: social media have opened up the possibility of being creators / co-authors of cultural content with an enormous potential of exposure to the world, whose actual outcome obviously depends on the interplay of many different factors. Since the cultural sphere refers to the theme of expression, it becomes relatively easier (as compared to science, where the role of technical expertise is necessarily more imposing) for citizens to participate in a meaningful way. In this sense, culture can become a real laboratory of human development and sociality through creativity. Precisely because of its inclusive nature, it is necessary to **enable people to participate in a proactive, co-creative way, to give rise to shared and meaningful sense-making processes**. With an awareness of this new reality, CHIs must take responsibility to concretely and actively favour such an integration, providing fertile ground for digital participatory interaction with users in terms of skills, tools, and accessibility of knowledge resources.

Social strategies to get out of the pandemic have strongly involved the use of digital platforms for the dissemination and production of culture in the CH sector. But what about digital users? From the first analyses carried out by the inDICEs project on some cultural and creative industries (CCIs), we find a gap between the effort to produce digital cultural content put forward by the CHIs and a struggling active interaction with (and affiliation of) users.

One of the most neglected variables in the existing socio-economic policy context is precisely the rate of cultural participation of citizens. There is generally little awareness of how a low rate of cultural participation reflects forms of cognitive poverty and deprivation, which often strongly correlate with other socio-economic deficiencies. The consequence, especially in a knowledge society such as the one we inhabit, is the impossibility of achieving real forms of social inclusion, and failing to take advantage of the extraordinary opportunities offered by digital platforms and resources for the sake of human development, quality of life, and empowerment.

The real challenge for CHIs is to work in a context of a strong intersectoral and intra-sectoral networking, constantly fed by open debate, with a firm eye to the local and European socio-economic challenges. The effort is already evident in the policy vision for the coming years by the European Commission which, with the new 2030 Agenda, makes cultural production and participation explicitly connected to social cohesion goals. In particular, programs such as Horizon Europe, focused upon research and social impact, and the related Knowledge and Innovation Communities (KIC) call on cultural and creative industries are clear cases in point. Culture can provide fresh approaches and insights to tackle social challenges, and the digital, in this regard, may be an extraordinary amplifier, which allows participation while overcoming constraints of physical presence and simultaneous access. But it is necessary to improve the depth and quality of the type of

participation processes that are promoted by the digital programs of cultural institutions, because mere audience engagement is not enough to ensure lasting, transformational social impact and to contribute to the full progress of civil society in terms of active citizenship, seizing a fundamental generational opportunity to pursue a new, different development scenario.

In order to map the current situation about digital cultural participation of CHIs users, the inDICES project, gathered a large amount of data²⁴ from online sources, with special attention to social networks. This was complemented with a list of case-studies and correspondingly appropriate indicators for each cultural and creative sector. This enables the project to carry out e.g. trend analysis for various CCS through web posts, analysis of the relation between CHIs and their social network users, impact analysis of specific social campaigns, impact analysis of CCS with respect to specific socio-cultural trends, network analysis and mapping of cultural digital platform ecosystems as well as psychosocial analysis of web content in various CCS sectors. The analysis data are then used to define policy recommendations on agenda setting and the role of the digital in enabling forms of cultural access, participation and production, highlighting the potential of the digital dimension of CHI as a channel of access to culture. It forms the basis of the following recommendations.

5.1.1. Main aspects to take on board when developing an institutional agenda

- **The social impacts of cultural and creative production with respect to major societal challenges:**
 - a. income, social and educational inequality;
 - b. climate change and green transition;
 - c. new educational-cultural crossovers and the role of digital technologies;
 - d. new innovation crossovers with non-cultural industries such as mechatronics, health, environmental sustainability;
 - e. new hybrid models of physical-digital tourism;
 - f. fostering social cohesion and facing the migrant crisis.

- **New business models that can support emergent forms of digitally-empowered co-creation.** The Millennials, Generation Z and Generation C as digital users are naturally familiar with co-creation practices and there is great demand for new digital innovation-driven business models. These new socio-cognitive trends hold great promise for the future business development of cultural and creative production. Of course, industry priorities must be considered in the business model regeneration process, but users' active participation in product-related content creation is essential in the current phase of strategic restructuring of digitally-driven content industries. A best practice is provided by the Digital Fashion Technology sector, whose digital users are often involved in product co-creation by providing tips and insights about their own body-shape fit and product design preferences.²⁵

²⁴ See the project deliverable 1.3 "Report on Gathering Data" on <https://indices-culture.eu/deliverables/>

²⁵ Ross, F. (2020). Co-creation via digital fashion technology in new business models for premium product innovation: Case-studies in menswear and womenswear adaptation. In Sustainable Business: Concepts, Methodologies, Tools, and Applications (pp. 1147-1172). IGI Global.

- **The role of cultural and creative production in the post-pandemic repurposing of public spaces.** The pandemic can be a real turning point for the re-conceptualisation of public spaces, given the forced physical redistribution of the workforces from central business districts and physical workspaces to remote work empowered by new digital tools. Retail spaces, business office spaces are increasingly abandoned, with corresponding effects on the housing markets targeting the working class: the whole structure of the cities is changing profoundly, and with it, the meanings and identity of urban spaces. A culture-led rethinking of public spaces can be a key strategy for a collective re-purposing of meaningful urban spaces, supported by the power of the digital in creating communities and managing the commons, as demonstrated for instance by the “social streets”²⁶ phenomenon.
- **Understanding the role of emerging technologies in the new cultural and creative ecosystems (AI, Virtual Reality, Augmented Reality, Blockchain, Internet of Things, etc.).** There are many evident examples of the possible technological implications of digital innovation scenarios, such as the so-called “cryptoart”. A new kind of artistic content production is being provided by means of brand-new digital tools and strategies such as blockchain affordances. Same for new emerging job positions such as augmented-reality makeup artists that create face filters for social media. The impact that these new forms of exchange and production may have on the cultural ecosystem is broad and diverse, but mainly connects to the paradigm shift regarding the ownership and dissemination of cultural content.
- **The role of cultural and creative production in the development of new circular economy models.** The debate about culture and the creative industries has moved away from a linear value chain logic to address new circular and network approaches, as embodied in the notion of the creative ecosystem. This re-conceptualisation, which is largely driven by the new imperatives of the green transition and of socio-environmental sustainability, has caused both policymakers and creatives to reconsider creative processes in a holistic perspective. It has also led to a reconsideration of the very definition of culture and the creative industries, one that can no longer be just limited to revolving around the artist and the creative professional only, but must also include the manifold processes and activities of making, distribution, exchange and archiving of content. Taking into account the expanded production system of culture means following its complex ramifications through time and space, as the circular economy vision urges us to do.

5.1.2. The role of the digital in enabling forms of cultural access, participation and production

According to the early results that emerged from the first set of data analysis on CCS case studies, we are going to put together first suggestions for policy recommendation guidelines. The goal of these analyses is to identify insightful elements that can help to describe the role of the digital in enabling

²⁶ See <http://www.socialstreet.it/>

forms of cultural access, participation and production, through the relation between the most important Cultural Heritage Institutions' Facebook and Instagram pages and their users (with a specific focus on the pandemic impact on the digital activity). This information can be useful to highlight the digital behavioral trends of CHI (the tools, the streams and their gaps and potentials), their real capacity of involving and communicating with their users.

As we can see from the following early single-case and comparative analysis²⁷:

- The pandemic led to putting a lot of extra effort on digital interaction between Libraries and Archives and their users, compared to the Museums institutions which maintain quite the same level of intensity of digital activity.
- Relationship between follower growth and interaction rate: if the number of followers grows and the interaction rate remains stable, it means that the new followers interact in forms that do not differ substantially from those of the old ones, and therefore engagement campaigns targeting new audiences have worked; in the opposite case, if the number of followers grows and the interaction rate drops, it is plausible to say that the new followers are inactive and only the hard core of already registered and active users continues to really interact. In our cases, even if there is a constant follower growth, the interaction rate decreases: this may imply a lack of interest from users or a large share of inactive/non-engaged public, which can be related not only to the type of content produced but also to the production practices themselves, that need to become more horizontal and to exploit in a more inclusive and substantial way the potential of the digital platforms.
- CCS during the pandemic started using different tools for keeping in contact with their users such as videos and IGtv.
- Archives:
 - Higher interaction with Facebook public: the audience is probably older compared to other sectors' digital users;
 - Peaks of interactions corresponding to the two lockdown periods;
 - Effort in producing content in areas where archives were probably aware of existing significant gaps (second lockdown, IG, IGTV).
- Libraries:
 - Facebook's users were already engaged and active, which may mean that libraries, which represent a point of reference for their local communities, maintain a strong relationship with their community also digitally.
- We have so far observed, in museums and libraries, a drop in engagement associated with the COVID-19 pandemics. The drop in engagement was in particular remarkable for Instagram, whereas on Facebook the effect was less striking. Both cases are focussed on GLAM institutions that are i) traditionally meant to be physically visited ii) offer cultural content that is meant to be timeless. We could possibly expect that other case studies considering cultural industries less linked to the physical experience and offering more ephemeral experiences would be different. Indeed, Instagram is a kind of social network where one shares "special moments" that are perhaps harder to create in the context of the GLAM institutions than in other industries like, for example, fashion, where content consumption is not traditionally limited by physical access and, most importantly, where the ephemeral nature of the content conjures up in rendering a particular moment "special".

²⁷ The complete reports can be accessed [here](#).

5.1.3. How the digital dimension of CHI works as a potential channel of access to culture

The power of cultural participation in cultural production models 3.0 in the digital sphere: what are the impact areas of interest to CHIs, from which they can benefit and that can convince them to approach these models?

In the landmark publication “From Culture 1.0 to Culture 3.0: Three Socio-Technical Regimes of Social and Economic Value Creation through Culture, and Their Impact on European Cohesion Policies”²⁸ **eight impact areas** are identified for which research activity, policy planning and practice (or at least conceptual development) are significant for assessing the potential of social and economic impacts of cultural participation. They are part of a vision, explained in the same article, that sees “Culture 3.0” as a successor to previous socio-technical regimes of cultural production, the traditional “patronage” and the era of cultural industrialisation. Both this vision as well as the eight areas were a source of inspiration used throughout these guidelines.

INNOVATION: innovation has mainly to do with the growth of effective social transmission, translation and implementation of new ideas in business practices through the cooperation and direct involvement in the rules of creative content production that people can experience actively via digital platforms. They allow people to learn how to develop innovative meanings and practices (and, at the same time, how to challenge previous prejudices: the more digital cultural participation is socially pervasive, the more the socio-cognitive effects of cultural participation on attitudes towards innovation and change become relevant and visible). Massive bottom-up capacity building, such as the digital practices that occur in the digital platforms that characterise the web 2.0, is a promising path to create an innovation-driven economy and society. Active digital cultural participation could determine indirect macroeconomic impacts and become an engine of endogenous economic growth in ways that are complementary to those traditionally understood and identified.

WELFARE, CULTURAL WELLBEING: a significant amount of evidence in the literature shows that cultural participation can have significant effects on life expectancy. When it comes to the digital sphere, it can significantly impact isolation and sense of belonging. In general, cultural participation was the second predictor of psychological well-being after presence / absence of major diseases. In this sense, its impact is comparable to that of income, and significantly stronger than that of other variables. In many studies, the effect is particularly notable for the ill and the elderly, where the gaps in psychological well-being between subjects with high cultural access compared to low ones are enormous. Furthermore, the effect of social relations on the consequences of the well-being from cultural participation is significant: a given level of cultural participation has a greater impact on individual well-being in social contexts with high collective levels of cultural participation than in those

²⁸ Sacco PL, Ferilli G, Tavano Blessi G. From Culture 1.0 to Culture 3.0: Three Socio-Technical Regimes of Social and Economic Value Creation through Culture, and Their Impact on European Cohesion Policies. Sustainability. 2018; 10(11):3923. <https://doi.org/10.3390/su10113923>.

with low participation. For what concerns the digital sphere, literature²⁹ shows that social media can support young generations through their capacity to create connections with peers, and provide access to positive, inspirational content. Social media supports students' mental health and if they did not feel that digital experience was positively serving their mental health, they took measures to not interact digitally.

SUSTAINABILITY: there is a new area of cultural policy action with potentially significant macroeconomic effects and which, moreover, can reveal new types of careers and opportunities for culture professionals: sustainability. The growing emphasis on the social dimensions of sustainability has sparked a reflection on the question of whether socially transmitted behaviours, habits and customs can influence the effectiveness of energy resource saving programs. Once again, cultural participation can have an important indirect role in fostering social mobilisation and awareness of the social consequences of individual behaviours linked to environmentally critical resources. Furthermore, the social dynamics of recycling behaviour appear to be sensitive to proximity effects, so that there may be potential for the combined action of cultural policies that enhance cultural participation and socio-spatial transmission of pro-social behaviour³⁰ (in particular, feeling responsible to commit to environmental enhancement goals).

SOCIAL COHESION: a significant effect of active cultural participation in the digital sphere has to do with social cohesion, following the example of the digital communities and their important internal relations, which is of special relevance in terms of human development. This can happen when digital participation works as an ally of physical experience and interaction in community empowerment, as an antidote to social isolation and helplessness. In different forms of online social networks, such as digital communities, several members feel that they belong to a group of people with similar interests and characteristics. Indeed, literature shows that positive social media-based relationships can lead to positive as well as meaningful connections with other users³¹. These positive relationships are built on a foundation of content that makes the audience feel like they are heard and understood.

INTERCULTURAL DIALOGUE is an issue that in the current European socio-political context is gaining unprecedented traction. In this regard, the indirect effect of cultural participation through the main digital platforms to international communities is creating the basic trust conditions for dialogue through the appreciation of cultural diversity and the overcoming of negative social stereotypes, often linked to ethnicity factors. The indirect effects of cultural participation on social cohesion stem from the fact that increased participation provides individuals and groups with new skills to conceptualize and understand diversity and to reprogram their behaviour from defensive hostility to open-minded curiosity, while discovering new possibilities for personal development. Considering the costs of interethnic

²⁹ See e.i. Stewart, A. J. (2020). Sense of Belonging in Digital Spaces (Doctoral dissertation, California State University, Fresno).

³⁰ Hautea, S., Parks, P., Takahashi, B., & Zeng, J. (2021). Showing They Care (Or Don't): Affective Publics and Ambivalent Climate Activism on TikTok. *Social Media+ Society*, 7(2), 20563051211012344.

³¹ Marlowe, J. M., Bartley, A., & Collins, F. (2017). Digital belongings: The intersections of social cohesion, connectivity and digital media. *Ethnicities*, 17(1), 85-102; Miño-Puigcercós R., Rivera-Vargas P., and Cobo Romani C. (2019) Virtual Communities as Safe Spaces Created by Young Feminists: Identity, Mobility and Sense of Belonging.

and intercultural social conflict in Europe, this area qualifies as one of the most promising and urgent in terms of reformulating the cultural policy agenda and corresponding macro-impact.

ENTREPRENEURSHIP AND KNOWLEDGE: The cultural and creative field can be a powerful incubator for new forms of entrepreneurship, and the rapid growth of online content industries is paving the way to a new entrepreneurial culture, with strong generational identification. Moreover, these new forms of entrepreneurship could significantly improve the employability of humanities graduates, whose appeal to employers in the more traditional spheres of innovative entrepreneurship is generally considered weaker than that of technology majors. Finally, innovative forms of culture-related entrepreneurship could be important in addressing the new societal challenges of employability and shorter working hours in the context of the fourth industrial revolution and the unprecedented new problems of designing social environments characterized by pervasive human-computer interaction.

LEARNING SOCIETY: The connection between lifelong learning effectiveness and intelligence, understood as the development of capacities that allow for successful adaptation, selection, and modelling of the contextual environment has been well established; again, there is a clear relationship between the evolution of this form of intelligence and the cultural capital acquired, an effect that can be seen as a consequence of strong evolutionary selective pressures. The association between active cultural participation and lifelong learning is therefore physiological and, indeed, one might even think of active cultural participation as a specific form of lifelong learning itself. However, it remains open to question whether, and to what extent, there is a strong, stable association between the breadth and effectiveness of lifelong learning programs and (active) cultural access. Research on this topic would be of great interest, not to mention its implications in terms of synergies between educational and cultural policies and the corresponding endogenous emergence of new hybrid models and approaches.

COLLECTIVE IDENTITY: A final connection can be traced to collective identity. In recent times, considerable emphasis has been placed on the role of new and spectacular cultural facilities in affirming the identity and global visibility of specific urban or regional environments, and more generally on the role of culture in redefining social and symbolic foundations. This is probably one of the best understood indirect effects of digital production and participation, but it is worth noting that this impact has often been misinterpreted as the latest version of a commodified mass entertainment economy. On the contrary, the potential for the development of a collective identity re-constructed through the digital lies in its ability to stimulate new inclusive dynamics of content production and new modes of cultural access by the local community, as a consequence of the new opportunities created by the attraction of external resources. The crucial evolutionary impact of culture on collective identity is to enable the community to reconstruct a long-term vision of its own development, build transformational visions and take action accordingly.

5.2. Empowering IPR for Cultural Heritage Institutions

While the research presented in 5.1 details the potential of the digital sphere for CHIs to connect to the shifting centres of cultural production and reach out to the creative industries, entering this sphere by publishing collections online brings with it the necessity to manage intellectual property rights. While these rights are an essential tool to protect the work of creators and underpin the creative industries, as many heritage institutions protect and safeguard copyright protected works, publishing those online poses some serious problems and requires deeper consideration. In this section, some guidelines are offered on how best to approach these issues.

Step 1. Consider the end goal

Some works of the CHIs' collections may be protected by intellectual property rights, which, considering that CHIs are often not the rights holders of the rights granted to a work, may pose restrictions to the uses of these works that CHIs need to conduct to fulfil their public interest mission. For instance, copyright questions arise on the preservation of the collections, the promotion of culture and knowledge and the sharing and re-use of the cultural content, and they become more and more prominent with the development of new technologies and the new cultural consumption modes.

As CHIs plan their digital strategy, policy direction and objectives, they then need to ensure that copyright management in every step of the way takes the end goal into account. The earlier in the process and the more consistently the CHI considers the topic of copyright, the better.

- Take into account that the intellectual property rights underlying the works of your collections will determine the future uses of the works you may provide to the end-users and therefore may have an impact on your overall digital strategy.
- Think in advance what you want to do with the works in your collections once digitised and which rights you may need before engaging in mass digitisation projects. This will save resources to your organisation and will maximize the impact of your digitised works.

Step 2. Acquisition

Acquiring the 'physical' work, through a donation, purchase, short and long-term loan or other form, does not mean obtaining the rights. This needs to be made explicit in an agreement with the person or institution who holds them. The moment your institution acquires the work is also one of the best chances to be in touch with the rightholder.

- Ensure that the contracts you rely on have a clause that foresees the obtention of the necessary rights to pursue your objectives.
- The modes of acquisition and scope of the rights that you will be obtaining of the works will also have an impact on the manner you manage the IPRs underlying the works in your collections. For instance, do you want to make an exhibition of this work, or display it in your online repository? Make sure you ask for permission to do all that.

- Document the information accurately. It is important that you record the rights you have obtained, the duration, the requirements and other conditions attached to it, for transparency, and to facilitate the use of the works across the organisation and in the long run.
- Record as much rights-related metadata as possible. For instance, can you obtain from the donor, seller or other information about the author, date of creation, date of publication, etc.? This information might be difficult to obtain otherwise, and will certainly help you.

Step 3. Clearing rights

CHIs need to obtain the necessary scope of rights ideally prior to engaging in the digitisation process and making the works available to the public. However, the clearance of rights may entail a number of difficulties for CHIs and can be costly, time-consuming and burdensome. To obtain the permission from the rightholders CHIs normally enter into licensing agreements with rightholders. By conducting a license with rightholders, CHIs obtain a required authorisation to make certain uses of licensed works. Therefore it would be advised to:

- If there are no rights granted to a work or copyright has expired, a work falls under the public domain. A work in the public domain could be used by the institution without IPR-related restrictions (other legal or contractual restrictions may apply). Importantly, moral rights of authors should be still taken into account if your institution is located in a jurisdiction where moral rights are perpetual.
- For in-copyright works, there are *exceptions*³² to the inherent principle of copyright where works granted copyright protection can only be used once you get the permission from the author or rightholder of the work. These exceptions may apply to some institutions for particular types of works and/or particular uses. Accordingly please check the applicable exceptions for the types of uses and works you want to utilize in your country as there is no harmonisation at the EU level. Note that exceptions may have a limited scope.
 - For instance, the ‘preservation exception’³³ will allow you to make copies of the works for preservation purposes but you cannot rely on such exceptions to share your collections online.
 - Some exceptions may only apply for works that are considered to be permanently within the collections of your institution. Works are considered to be permanently in an institution ‘when copies of such works or other subject matter are owned or permanently held by that institution, for example as a result of a transfer of

³² See, for instance, article 5 of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society; articles 3 ff of the Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC 2019.

³³ article 5.2(c) of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society; article 6 of the Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC 2019.

ownership or a license agreement, legal deposit obligations or permanent custody arrangements'.³⁴

- Other intellectual property rights must also be taken into account, e.g. trademarks for fashion museums or designs rights for design museums, for instance, and, in consequence, the authorisation from the rightholder must also be obtained.
- If the works are still in copyright and no exception applies to your intended uses, check the ownership of the rights, identify the author or the collective management organisation (CMO) that operates on his/her behalf.

Step 4. Conservation, preservation and digitisation

Nowadays digitisation of works is a common practice among the cultural institutions which requires paying particular attention to the copyright rules since digitisation entails the making of reproductions and duplications of the works.³⁵ This is especially relevant in mass-digitisation processes that often CHIs engage in.

- Consider prioritizing the digitisation of works that were never subject to copyright, whose copyright has already expired or to which you own the rights. This will allow you to use the digitised work without copyright restrictions (even if moral rights remain).
- At the EU level, there is an exception to copyright according to which cultural institutions³⁶ are allowed to make copies of works for the purposes of preservation without having to ask the permission of the rightholders.³⁷ Such an exception is now mandatory for all Member States. Check out the scope of the exception in your country. Is it limited to works that are permanently in your collection?
- This exception normally covers the obsolescence of formats. So, if you had your work digitised in one specific format, it can be changed to adapt to new digital formats without asking for permission.
- Making copies of works under this exception is only justified if they are made for preservation purposes. Check out your legislation. Does it define what preservation means? Does it include making other copies that are necessary to manage the work internally and with external partners?

³⁴ Recital 29, Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC

³⁵ It entails the economic right of reproduction of the author of the work.

³⁶ The institutions that are considered beneficiaries from the exception may differ among the national jurisdictions. For a list of the specific institutions that can enjoy such exceptions, please visit the Copyright Acts of the country where your institution is located.

³⁷ article 5.2(c) of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society; article 6 of the Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC 2019.

Step 5. Cataloguing

The preservation, digitisation and study of the works in CHIs collections normally entails the creation of catalogues of works which are a key asset in CHIs' activities. The friction of these catalogues may pose legal challenges. First, when creating these catalogues, CHIs have to often make copies of the works which are recorded and shown in the form of 'thumbnails'. These reproductions of works may entail copyright-related challenges when the original works belong to third parties. Second, these catalogues can be legally considered as databases and hence they can be protected under exclusive rights (under EU law,³⁸ they can be protected by copyright (when they are original enough to merit copyright protection) but can also be protected by a sui-generis database right³⁹). These catalogues, which provide specific information of particular types of works, are nowadays created in a digital form and form an important part of the digital strategy of a cultural institution.

- Take into account that the content (namely, the reproductions of works) included in the catalogue can still be protected by copyright or related rights that may belong to third parties. This will have implications on what you are able to do with your catalogues, for instance, sharing the database online.
- When creating the catalogue, please check in advance whether you have the necessary rights to make copies of the works for the purposes you want to use the catalogue. It is not always clear whether these reproductions may fall under any exception.
- Keep in mind that you will need to obtain the third parties' rights for the online uses of these catalogues.
- When creating such catalogues, consider the ownership of the database itself, whether these databases have been created within your institution or have, on the contrary, been created by external companies/consultants.

Step 6. Giving access onsite

Cultural institutions have also the core mission of promoting access to culture and knowledge. They do so, for instance, by providing access to the works in the premises of the institutions, through welcoming the general public to the exhibition of works in museums, or by allowing researchers to access printed or digitised material in a library's reading room. These activities might require permission from the copyright owner unless an exception to copyright or other similar provision exists because the public display of the work can often be considered a communication to the public and/or a distribution of the work under copyright law.

- Check whether the country you are located in has a provision that allows the exhibition of works without having to ask permission to the rightsholder once you get the 'physical work' through your acquisition agreement. Otherwise, take into account that for works under copyright, a license from the rightsholder is needed for any exhibition or distribution of

³⁸ See Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.

³⁹ The term of protection of the sui-generis right lasts for 15 years from the date of completion of the database. Nevertheless, each time a substantial new investment is made, a new term of protection could arise.

copies of the work.⁴⁰ Otherwise, you could be facing copyright infringement. No permission is needed for works that are in the public domain unless moral rights remain in your jurisdiction.

- Making copies of works for advertising such exhibitions can still be done without specific permission from the rightsholder but only in those jurisdictions where such exception has been implemented⁴¹. Digital advertising e.g. any online advertising or catalogue for the exhibition is normally covered by this exception.
- In addition, there is an exception that applies to the purposes of research and private study at the EU level when the works are communicated to the public via dedicated terminals.⁴² So if you have specific devices for the public, you could share in-copyright works, when the end-user is carrying out research or private study-related activities, without the need of asking specific permission. Check whether you can rely on such an exception as it depends on the jurisdiction where the institution is located.

Step 7. Giving access online

Emerging technologies and the internet have disrupted the traditional modes of consumption of cultural content. Cultural institutions are increasingly aware of the need of sharing their collections online if they want to remain relevant, increase their impact and engage further with the audience. However, this also entails new copyright challenges, because making a work available online is a communication to the public, an act that requires permission by the right holders. While there is no general exception at the EU level that allows CHIs to freely share their collections on their website or other platforms, there are specific ones, and variations by country.

- When sharing your works online, consider, first of all, the type of work that you want to share. There are specific exceptions for some types of works such as for orphan works⁴³ and out-of-commerce works⁴⁴ according to which cultural institutions can share this type of works (after some prerequisites):
 - *For orphan works*⁴⁵: check that the orphan work has been declared orphan after a diligent search has been carried out. Check the work that is orphan falls in one of the permitted categories of works (books, newspapers journals, magazines and other writings, cinematographic or audiovisual works and phonograms, and embedded works) and take into account that the work must be permanently held in your collection. If these requisites are fulfilled, you can share the orphan work online. *** Take into account that ‘stand-alone’ photographs, e.g. photographs that are not

⁴⁰ There may be some exceptions to the exhibition of a work in particular jurisdictions.

⁴¹ At the EU level, see article 5.3(j) of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.

⁴² At the EU level, see article 5.3(n) of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.

⁴³ Orphan works are works such as books, newspaper and magazine articles and films that are still protected by copyright but whose authors or other rightholders are not known or cannot be located.

⁴⁴ A work is out of commerce when it is not available to the public through customary channels of commerce.

⁴⁵ See Directive 2012/28/EU of the European Parliament and of the Council of 25 October 2012 on certain permitted uses of orphan works (2012) OJ L299/5.

embedded in other works do not fall under this exception, and hence you will need a license for their use.

- o *For out-of-commerce works*⁴⁶: check whether a collective licensing organisation (CMO) provides licenses for these types of works in your country. If there is a CMO that issues these licenses you will need to engage in one license with the CMO in order to share these works online. In the absence of such licenses, you may be able to share this work online by relying on an exception.
- o CHIs do not need to obtain permission for works in the public domain unless: (i) the digitisation of the work in the public domain is original enough to merit copyright protection and (ii) the copyright belongs to a third party- external company/photographer *or* (i) the work in the public domain has been digitised by an external company/photographer and is located in a jurisdiction that grants related rights to non-original photographs and (ii) the work falls in a category other than the visual arts domain.
- When sharing works online, take into account that there may be additional permissions needed if you are sharing the work on a platform other than your own website. For instance, social media platforms may require that you grant a license to the site for them to be able to display it and allow its sharing. Double-check that you obtained sufficient permission from the rightholder to do that.

Step 8. Enabling Reuse

CHIs are increasingly looking for new ways of interacting with the audience, providing spaces for a critical dialogue among citizens, raising awareness of their collections for current and future generations while guaranteeing equal access to cultural heritage for all the citizens. Hence, together with preserving and giving access to your institution's digital cultural heritage, you might want to take action to facilitate and encourage its use and with that maximise its impact on society. For this reason, CHIs must, first of all, consider for which purposes they are interested in providing such re-use, e.g. research, education, commercial, etc., and take into account the following:

- *General considerations*: with the objective of promoting the access and re-use of works, you must communicate the status of the work and the possibilities and/or limitations for re-using the work clearly. This can be done by clearly indicating the works that can be 'freely' used without restrictions and those that are protected by copyright or subject to other related limitations. Use rights statements or use the CC public domain mark for works in the public domain.
- *Research activities*: the works in the collections of cultural institutions may attract strong interest for researchers and other stakeholders that may be willing to engage in commercial or non-commercial activities by using the CHIs' collections. In the data economy and the increasing development of artificial intelligence, the value of text and data is not considered in isolation but in the potential of extracting it with the purpose of analysing it and

⁴⁶ See articles 8 ff of Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC 2019.

discovering trends and patterns. Text and data mining (TDM) provides the possibility nowadays to mine a huge amount of information and therefore plays an important role in research and development of analytical tools.

- If you are interested in supporting research or to carry out research, including TDM of your in-copyright collections, you could now provide access to your collections by relying on an exception to copyright without having to ask for specific permission.⁴⁷
 - Take into account that carrying out TDM activities for other purposes than research may still require a licensing agreement with the rightholder of the works.⁴⁸
 - Accessing works for research and private study purposes can also be allowed when it is carried out via specific devices in your institution without having to ask permission from the rightholder.⁴⁹ Check whether your institution is located in a country that allows such an exception.
- *Creative re-use of works:*
 - If the work is in-copyright, specific permission, including to adapt and modify the work, from the rightholder is needed. It is advised to obtain as many rights as possible during the license negotiation process with rights holders. In particular, obtaining the right of communication to the public from the rightholder, and more specifically, the right of making works available in the digital environment would help provide access and re-use to such works.
 - If the work is in the public domain, take into account that moral rights may still prevail in works whose copyright has expired and therefore the author may restrict the re-use.
 - *Commercial activities:* the works in CHIs collections may also have a strong value for commercial activities such as the creation of objects, fashion, designs, that can be done in partnership with commercial entities through licensing agreements. Commercial entities may also be interested in the works of CHIs' collections for big data analysis with a commercial interest, for publication in newspapers or magazines, among others. These activities may generate further revenues for CHIs. If you want to make further use of your collections, take into account that:
 - For in-copyright works belonging to third parties, you always need to have the permission from the rightholder, even for orphan works or out-of-commerce works

⁴⁷ See article 3 of the Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC 2019.

⁴⁸ See article 4 of the Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC 2019. This article provides for a new broader TDM exception that could still allow TDM for other purposes but it depends on the jurisdiction.

⁴⁹ At the EU level, see article 5.3(n) of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.

(see supra), where applicable exceptions may only be applied for non-commercial uses.

- You would be more free to use digitised versions of works in the public domain, where there are no underlying exclusive rights (unless there is any right prevailing on the digital copy of the work).
- You will need therefore to provide access to high-resolution images as only these images are valid for commercial activities.
- Negotiate in the licensing agreement with the commercial partner the specific uses of the works and the rights needed. Concretize as much as possible the licensing agreement and the distribution of the revenues (which may be carried out with the CMO in charge, if any).
- If you are using any trademarks or designs from the brand of the institution, ensure they are included in the licensing agreement as well.
- The use of your own trademarks and/or designs from your institution can be a good manner of generating revenues and impacting your audience through partnership with commercial entities as you are the exclusive owner. However, please take into account that owning trademarks and/or designs require maintenance costs that may not always be recovered.

5.3. Invigorating Collaborations & Organisational Growth

The unavoidable digital transformation of CH institutions requires the development of overarching institutional strategies that start from a reflection on how digital operations will impact the whole of the institutional mission. It is important to understand, however, that this goes beyond the *current* mission of the institutions, as becomes clear when reading e.g. the elaborate effort by ICOM to rethink the mission of the museum⁵⁰. It is not only about what digital technologies can mean for the CH institution, but also on how the CH can reinvent and/or adapt its mission and underlying business model in a highly interconnected world, in which the relationship between the stewards and guardians of heritage on the one hand, and the stakeholder communities and audiences on the other have been fundamentally changed, as explained in 5.1. In what follows some essential preconditions for successful digital strategies are explored, starting with the need for capacity building over the value of collaboration in networks up to a discussion of what this means for the institutional value chain.

5.3.1. Capacity building and Impact

The definition of digital transformation presented in Section 2 aims to help heritage professionals and organisations identify their priorities and design sustainable digital strategies. In the context of

⁵⁰ <https://icom.museum/en/resources/standards-guidelines/museum-definition/>

inDICES, it has helped to clarify what is needed to support the heritage sector through the project's outputs and build capacity for digital transformation. At the moment of writing, Europeana is developing a Capacity Building Playbook. As to impact, since 2017 Europeana has put consistent effort in developing the Impact Playbook, which has become a reference material in the cultural heritage sector.⁵¹

Creating conditions for more impact

Why build capacity for digital transformation? **For the impact it can create for a heritage institution, its audiences and stakeholders, and wider society.** We can talk about this impact in different ways, including using the Europeana Impact Playbook value lenses:

- operational impact - internal innovation of processes and approaches;
- innovation impact - external innovation opportunities, including with audience engagement mechanisms and use of digital heritage data;
- economic impact - resulting, for example, from improved internal processes, new business models, etc;
- social impact - the result of increased public and educational engagement with collections.

In Europeana's consultative exercise to define digital transformation, a gap emerged, namely that there is no clear vision of what (capacity building for) digital transformation will look like, as well as how it can be monitored and promoted. A Theory of Change is being developed in response to this at Europeana.

What does it mean for CHIs?

CHIs have the opportunity to ask the question of *why* they should embrace and develop their capacity for digital transformation. The Europeana Impact Playbook and the Phase One change pathway exercise can be a key tool to support this process. The tool can be used to give organisations a perspective on long-term change and strategy, facilitating a focus on the process and activities of institutional change (e.g. developing staff capacity, innovating technical processes) so that change is sustainable and based on future-proof solutions.

They then have the opportunity to ask *how* they can build capacity for digital transformation. Based on the results of the self-assessment tool and, using the forthcoming Europeana Capacity Building Playbook, they can think about the human capital and technological capacity that should be further developed in their organisation; where the gaps are, and what resources or opportunities exist to help meet those gaps. Thirdly, they can then ask *what changed* as a result of this process. This brings the perspective back to impact trying to ask questions such as What was the value of their actions? What could be improved? How can future efforts be made more effective?

What tools exist to help skill up cultural heritage professionals on impact?

⁵¹

pro.europeana.eu/post/introducing-the-impact-playbook-the-cultural-heritage-professionals-guide-to-assessing-your-impact

- Europeana is developing the Capacity-building Playbook to support organisational change. This tool follows the iterative and easy-to-use approach of the Europeana Impact Playbook.
- Europeana has created a [form](#) in which the public can list and describe digital heritage capacity-building efforts in their country or that they know about. This will form a crowd-sourced inventory that will be hosted on Europeana Pro and continually updated. Professionals can benefit from this list of relevant resources.
- [Impkt.tools](#) (a resource page on Europeana Pro) hosts the Europeana Impact Playbook and a number of accompanying resources, including a standardised question bank and published impact assessments.
- The inDICES self-assessment tool is also conceived for CHIs can also use the self-assessment tool to evaluate where they are in their digital journey.
- Foresight, horizon-scanning and scenario planning exercises, where CHIs creatively think about how they will deliver impact for their stakeholders in different possible versions of the future whilst mapping possible eventualities and change, will be an asset for strategy and activity-planning. There are different accepted methodologies that fall under this type of activity.
- Knowledge-sharing amongst CHIs is key. There is a need to publish case studies that show how CHIs across Europe and at differing levels of digital maturity have built their capacity for digital transformation. As defined in the published working definition of digital transformation, all change, no matter how small, has value and creates impact for stakeholders. Insights into this change have most value when they are widely shared. Europeana PRO and the inDICES Open Observatory offer room for that.

5.3.2. The value of networks

The range of skills and competencies needed to run a CHIs is very varied, and contains both highly specialised functions in light of the specific collections as well as broader, more generic management skills. Moving towards digital operations adds a distinctive layer of complexity to all of this, as ICT technology, by its very nature, tries to look at what is common to a wide range of problems rather than seeking specific solutions.

This means it is not evident for individual CHIs to have every necessary competence on board to perform successful digital operations. In many cases, ICT services are outsourced. But then again someone within the institution needs sufficient *interactional expertise*⁵² to engage with outside experts to set up and manage innovation projects. Institutions need knowledge on digital curation, Linked Open data, on 3D, on digital file formats and preservation, on digitisation equipment, on social media interaction: it is a long list of shifting priorities, which makes it not easy to make sure one has at every moment the right people on board.

This is why for any CHI, active participation in carefully selected networks is key to a sound digital strategy. This starts with regional and/or national networks, where competencies can be pooled and expertise can be shared. A good example of this is the Dutch [DEN](#) network, which hosts the [Network](#)

⁵² Collins, Harry, and Robert Evans. 'Expertise Revisited, Part I—Interactional Expertise'. *Studies in History and Philosophy of Science Part A* 54 (2015): 113–23.

[Digital Heritage](#) and takes up the role of a cross-sectoral support organisation. It also provides training and resource sharing. [NEMO](#) is a network of museum associations and museums in Europe offering advocacy, training, expertise sharing and cooperation. In this network, museums can share their concerns and develop positions to influence decision making, as was e.g. done with the NEMO COVID survey⁵³.

The network of CHIs and experts in the field of digital cultural heritage linked through Europeana is certainly one of the key ones to look out for. The Europeana initiative consists of three pillars. The Europeana Foundation operates the Europeana platform providing resources, tools and services. The [Europeana Network Association](#) is open to professionals who share an interest in digital cultural heritage, and offers a wide range of activities under the umbrella of several communities of interest. The [Europeana Aggregator's Forum](#) brings together the organisations who feed content into the Europeana platform. It has national/regional, domain and thematic aggregators, which share expertise and mutual support.

5.3.3. Value chains in the Digital Single Market

Thinking about the value of digital cultural heritage is closely linked with impact, as value can be understood as economic or non-economic in nature. For CHIs to have a meaningful impact on different areas of social life, it is important to understand how the activities they conduct can affect their audiences and - speaking more broadly - the society as a whole.

The inDICES' work on [Policy analysis of value chains for CHIs in the Digital Single Market](#) was aimed at fostering our understanding of current business models of interaction between CHIs and creative industries and how such models can reinforce access to culture. We started by looking into the idea of the value chain that has been introduced as an analytical tool by Michael Porter⁵⁴. The concept provides a very strong metaphor for understanding circulations of goods and services in the economy, however it has been criticised for providing a simplistic, linear understanding of the process of production. Cultural value creation was always a unique form of production due to the highly symbolic value of the created products. Thus, we need to acknowledge the complexity of value-creating interactions and processes related with cultural products. This becomes even more relevant with regard to digital content, considering how the digital products are produced, distributed and used. That is why we decided to look into a more sector-specific concept of the "creative value chain" that has been proposed and operationalised for the purpose of cultural statistics by UNESCO and Eurostat. The "creative value chain" is a basic analytical tool for understanding cultural production⁵⁵. This conceptual tool has been designed to provide means for a more in-depth analysis of the production and distribution of culture. The culture cycle consists of five stages: creation, production, dissemination, exhibition/reception/ transmission, consumption/participation. The culture cycle (Figure 2) proposes a cyclical metaphor in order to

⁵³ <https://www.ne-mo.org/advocacy/our-advocacy-work/museums-during-covid-19.html>

⁵⁴ Porter, Michael E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. New York.: Simon and Schuster.

⁵⁵ UNESCO (2009), *The 2009 UNESCO Framework For Cultural Statistics (FCS)*, http://uis.unesco.org/sites/default/files/documents/unesco-framework-for-cultural-statistics-2009-en_0.pdf.

reinforce the idea that the relationships crucial for the cultural production can be complex and occur more as a network than as a linear, structured chain (UNESCO 2009)⁵⁶.

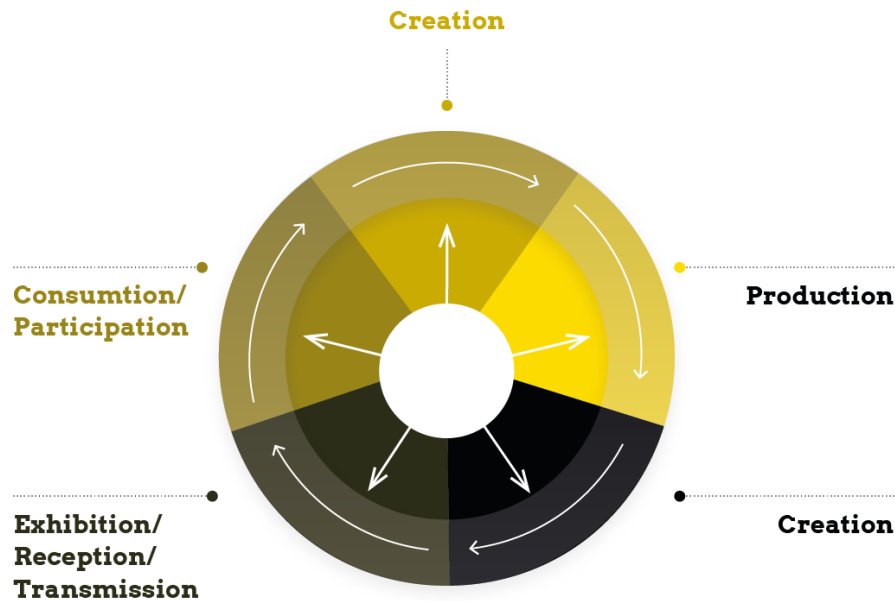


Fig. 2. The Culture Cycle

The circular, rather than the linear metaphor of value creation is more suited for the purpose of analyzing the value creation in the CCS also because of the specific role that consumers play in the creation of cultural value today. This is stressed by the UNESCO model that employs a circular metaphor that stresses the fact that cultural consumption and participation leads to new cycles of creation, and that the roles of cultural creators and consumers are intertwined. The value of cultural products is also linked with the socio-cultural identity of the consumers/stakeholders and nowadays - with consumers becoming prosumers - these actors can no longer be seen as located beyond the value chain. The process of digitisation and platformisation reorganises the cultural practices and imaginations, blurring the boundaries between creators/producers and end-users⁵⁷. This shift in social interactions was captured by Pier Luigi Sacco in the Culture 3.0 model that is characterized by "an explosion of the pool of producers"⁵⁸. Recently (also due to the global pandemic of COVID-19) digital circulations of cultural content have strengthened and online access to cultural goods has gained more importance.

⁵⁶ This cyclical model and the model proposed by ESSnet-culture (European Statistical System Network) in 2009 (where the three sequenced core functions of the creative value chain were distinguished: Creation, Production-Publishing and Dissemination-Trade) were combined by the authors of the 2017 study by KEA, "Mapping the Creative Value Chains" (De Voldere et al. 2017). The new model describes four core functions (Creation, Production/publishing, Dissemination/trade, Exhibition/reception/transmission).

⁵⁷ van Dijck, J. & Nieborg, D. & Poell, T. (2019). Reframing platform power. *Internet Policy Review*, 8(2). <https://doi.org/10.14763/2019.2.1414>

⁵⁸ Sacco, P.L. (2011), Culture 3.0: A new perspective for the EU 2014-2020 structural funds programming, EENC Paper

With the shifting perception of the role and social responsibility of CHIs, the question of impact has become of crucial importance for understanding what kind of value is created by institutions in interaction with their audiences (see eg. European Impact Playbook, based on the model proposed by Simon Tanner⁵⁹). The exploration of areas on which cultural participation and production have an indirect effect was also conducted in relation to the Culture 3.0 model and the eight tiers⁶⁰ that have been discussed earlier in this publication (See 5.1.3 p.17).

Taking all that into account, a value creation framework was proposed in the report *Policy analysis of value chains for CHIs...*, developed on the basis of existing approaches to understanding cultural value chains and impact of cultural heritage combined with insight from specific cases of re-using digital cultural resources. The framework is based on the UNESCO cultural cycle model and intended to capture in more detail the social and economic impact of digital cultural heritage. **The framework draws on the assumption expressed by the authors of the UNESCO model that value creation in the field of culture is rarely linear in the way it happens. Instead, value creation happens in networks that are complex and include varied, heterogeneous actors.** What is also important to note is that these networks often span different sectors of the society, including both commercial, public and civic or grassroots entities. Activities within the process are not limited to institutionalized practices and initiatives, overseen or inspired by state institutions. The cyclical nature of the production process also means that actors can have roles at different stages of the cycle. Most importantly, users are not limited to the role of consumers and can be engaged in earlier phases, especially if the process is cyclical and assumes several cyclical rounds of reuse.

The scheme of five basic stages of what the UNESCO model defines as the cultural cycle was the basis for the proposed framework. Again, the five-stage cycle proposed by UNESCO has the aim of highlighting the complexity and variety of activities that contribute value to broadly understood cultural resources. These five stages include: Creation, Production, Dissemination, Exhibition, Consumption. However, the model is not hierarchical and should be understood rather as a network. Within this network, all kinds of connections and directions may happen when producing cultural goods. There is also an assumption that the process can be cyclical, returning to previous stages over the cultural cycle. Moreover, while conducting the case studies analysis, we observed cyclical - instead of linear - processes within the first, initial phase of project Creation identified by the UNESCO model. In this phase, we identified several steps that are significant and play a key role in the process of idea origination (as it is a process and not a one-time moment). Specific milestones have to be achieved to arrive at the moment in which one has a sufficient, broadly understood vision for a project and its societal impact. These milestones can happen - as the authors of the UNESCO model envisioned - in a cyclical fashion (see visual representation below).

⁵⁹ Tanner, S. (2012), *Measuring the Impact of Digital Resources: The Balanced Value Impact Model*, King's College London, URL: [https://kclpure.kcl.ac.uk/portal/en/publications/measuring-the-impact-of-digital-resources\(2a2a09b5-b622-4e04-a2a4-11564bd8379a\).html](https://kclpure.kcl.ac.uk/portal/en/publications/measuring-the-impact-of-digital-resources(2a2a09b5-b622-4e04-a2a4-11564bd8379a).html); Tanner, S. (2020), *Delivering Impact with Digital Resources: Planning your strategy in the attention economy*, London: Facet Publishing

⁶⁰ Sacco, P.L.; Ferilli, G.; Tavano Blessi, G. From Culture 1.0 to Culture 3.0: Three Socio-Technical Regimes of Social and Economic Value Creation through Culture, and Their Impact on European Cohesion Policies. *Sustainability* **2018**, *10*, 3923. <https://doi.org/10.3390/su10113923>

The four key types of milestones can be also perceived as key processes/activities that CHIs can keep in mind while conducting digital projects:

- 1. Having an initial prompt** - it is more of a generic prerequisite as one starts working on a project when one has at least some initial intuition about what this project may look like.
- 2. Acquiring heritage expertise** – it is about knowing the resource, its potential value, its importance, but also both historical and up-to-date ways of interaction with the resource(s) at hand.
- 3. Establishing cross-sectoral collaborations** – it is about involving actors that come from different sectors pretty early in the process. We found that by achieving this milestone the interest of an end-user is safeguarded already in the vision creation process and the usage of connection and interaction mechanisms is more likely. This “safeguarding” comes from intersectoral discussions about its needs, preferences, practices, norm, challenges, etc.
- 4. Assuming non-access purpose** – we found out that only a little above 20% of access oriented projects make use of some sort of market linkages. We believe that if non-access orientation is already injected at the vision development phase of the project it substantially increases the chances that the direct market impact will occur.

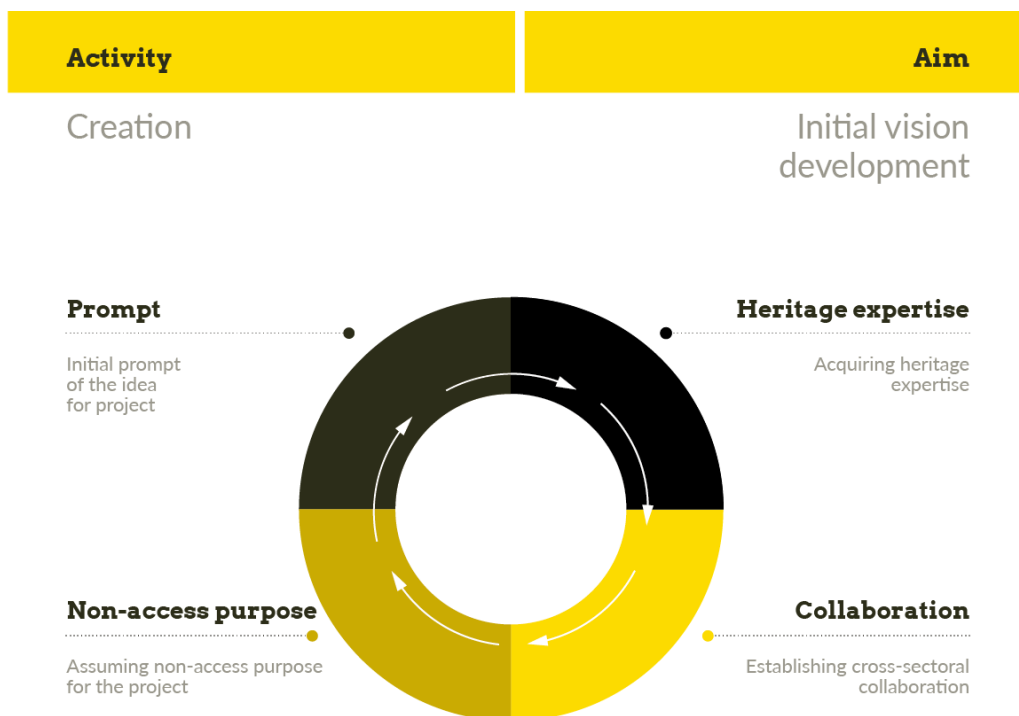


Fig. 3. Key Milestone types.

On the basis of the case studies analysis conducted, we have identified four building blocks in the chain or cycle of value creation in the field of re-use of digital cultural heritage: Vision Development, Production, Connection with Audiences, Market Linkages. These blocks can be seen as important milestones of delivering the impact with digital cultural resources. In the proposed framework,

broadly understood impact emerges on the basis of two broad types of activities, conducted in the Creation stage of the cultural cycle: connecting with audiences and market linkages. What is important to stress is that impact is not just economic in character. Cultural participation can be the key driver for value creation. The eight different tiers or areas of “indirect developmental effects of culture” can be understood as specific areas or modes of such indirect effects, but also can be seen as conceptual lenses (similar to those defined in the Europeana impact framework). The proposed framework acknowledges that societal impact can occur in market-based projects (where economic incentives and economic value creation are key aspects of the value creation process) and that social and economic impact should be treated as complementary.

Digital Cultural Heritage Value Creation Cycle

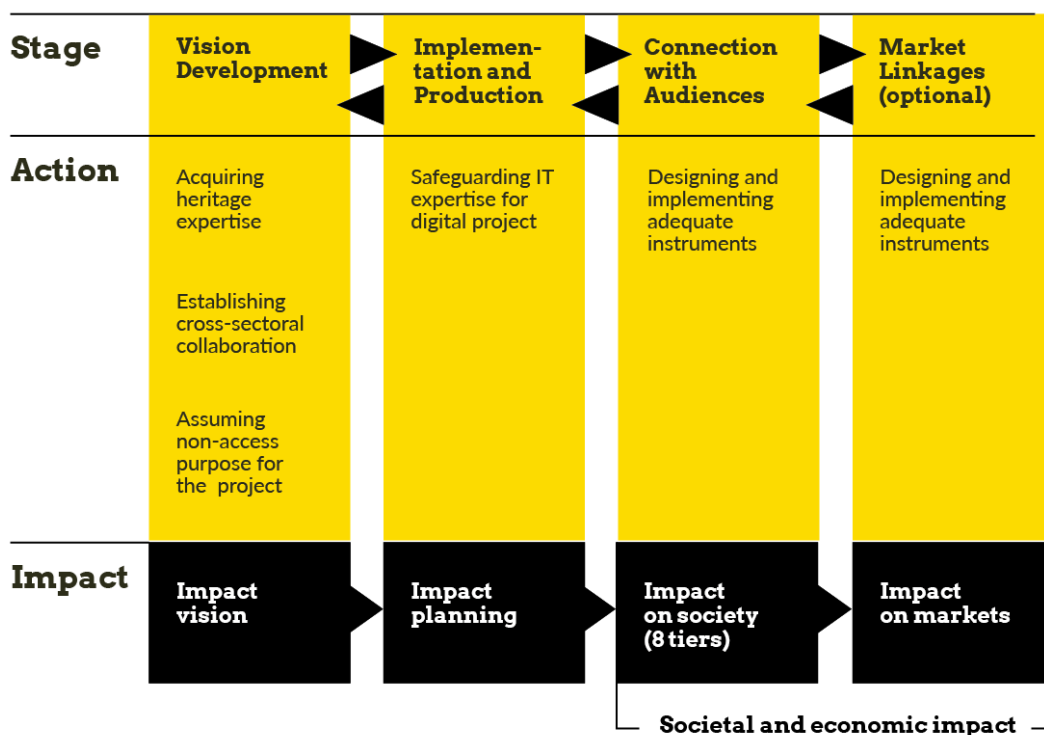


Fig. 4. Digital Cultural Heritage Value Creation Cycle.

What does it mean for CHIs?

The **Digital Cultural Heritage Value Creation Cycle** suggests certain activities that should be taken into account and planned when working on digital projects that use digitised heritage on the subsequent stages of the process. It also shows impact vision and planning as an integral part of the workflow. This framework stresses the importance of strategic planning (with audiences and envisioned impact at the center) and can help to plan and prepare digital projects and is complimentary with other tools described elsewhere in this document (e.g. Europeana Impact Playbook p. 28 5.3.1, digital workflows p. 37 ff. 5.4.3).

5.4. Approaching Innovation and Digital Strategies

5.4.1. Innovation with a purpose: how to build an innovation strategy fitting one's institution?

What is innovation?

“Today, innovation concerns all areas of activity. The Oslo Manual distinguishes between four forms of innovation: product innovation (goods and services), process innovation, organisational innovation and marketing innovation. [...]. Moreover, innovation processes can vary greatly from one sector to another; some of them are characterized by rapid and radical changes, while others are more conducive to innovations that are less disruptive and more incremental.

We can also speak of social innovation that has begun to take off in recent years and whose objective is to improve the well-being of individuals and communities. It can be a form of rupture from the solutions that are usually implemented, and it provides a creative response to economic and social problems that are not addressed by public institutions or markets. Similarly, environmental innovations – or eco-innovations – can be at the heart of sustainable development strategies. They can lead to new modes of production and to a transition to new economic models, including those inspired by circular economy logics.

Any kind of innovation is by nature complex and inevitable. It requires multiple skills and expertise at all stages of its process and is a necessity both for society in general and for companies and institutions, as part of a process of value creation.”⁶¹

Innovation processes can be radical, when we talk about a breakthrough or a total innovation, or incremental, when it creates a gradual and incremental change. In cultural organisations, the most common innovations are continuous or incremental⁶², which means that small improvements are made on the existing know-how and they are applied to the organisation's existing products and services.⁶³

⁶¹ Pizelle, P., Fournié, I., Caelen, J., Soler, J., Loeser, F., Simonnet, D., Henke, N., Decorps, C., Kelodjoue, E., & Masson, Z. (n.d.). WHITE PAPER: A brief study on overcoming the 10 major innovation pitfalls. Retrieved from <https://www.editionsdinnovation.com/publications-white-paper/?lang=en>.

⁶² Camarero, C., & Garrido, M. J. (2008). The Role of Innovation in the Relation between Market Orientation and Performance in Cultural organisations. *European Journal of Innovation Management*, 11(3), 413–434. Retrieved from <http://dx.doi.org/10.1108/14601060810889035>. See also Camarero, C., & Garrido, M. J. (2007). How alternative marketing strategies impact the performance of Spanish museums. *Journal Management Development*, 26(9), 809–831. Retrieved from <https://doi.org/10.1108/02621710710819311>.

⁶³ Handke, C. (2010). The Creative Destruction of Copyright – Innovation in the Record Industry and Digital Copying (Doctoral dissertation, Erasmus University Rotterdam). Retrieved from <http://dx.doi.org/10.2139/ssrn.1630343>.

Innovation has a complex life cycle, subject to various reasons for failure. Among these, the lack of appropriation of the innovation goal by the concerned persons is an important one. Innovation that changes habits must be felt as an improvement, a necessary modification of a previous state so that a bigger purpose can be reached. *Innovation needs a vision.*

5.4.2. Why innovating through digitisation is key for CHIs?

The primary stimulus that drives digitisation in CHIs is the goal to preserve and widen access to the collected cultural artefacts. Digitised works offer two main advantages: compared to physical artefacts, digitised objects can be made available online to be accessed from anywhere in the world at any time, and, if done correctly, digitisation allows access to detailed information that can help to contextualise the work, link to other objects, make it easily retrievable and reusable in new contexts.

In addition to this - and assuming a market approach - we could also consider the competitive advantage of cultural institutions in digitising their collections. It can become an opportunity to compete with other leisure cultural activities, as well as with other CHIs. If cultural institutions become a more competitive player and start innovating in a market logic considering their audience's needs, they take the first step to safeguard their financial viability and the relevance of the organisation in the cultural sector.

It is necessary to stress that digitising heritage collections is not so much an isolated project but rather an overarching institutional shift. Once online, what happens with the data? How to make it easily findable? How could it be reused and by whom? What are the risks associated with making such cultural data accessible online? Thus when talking about digitisation, it is necessary to consider comprehensive digital strategies that go beyond the adoption of digital technologies.

5.4.3. The need for comprehensive digital strategies

Spurred by the necessities of coping with the COVID-19 crisis, many institutions have accelerated the digitisation of their collections. However, this is not always embedded in an overarching strategy, involving the whole of the institution's operations. In these guidelines, we focus primarily on what should be taken into consideration at the institutional level. However, we will stress that this cannot be done in isolation: there is a compelling need for interoperability and data exchange, which means institutional strategies should best be embedded or aligned with regional or national strategies, and in accordance with standards of international networks.

In this part, we stress the importance of developing at the institutional level a comprehensive digital strategy that involves all aspects of the operations - from preservation to audience development and user engagement. We can point to existing examples from our networks. We discuss a revision of the inside-out digitisation workflow, and complement it with an outside-in workflow that starts from the stakeholder communities and tries to look from that perspective to the user needs, and how it impacts the organisation and information flow in the CHIs.

Digitisation workflow: inside out

In a classic digitisation workflow, a selection is made of collections to be digitised. Whether it is about mass digitisation of e.g. library holdings, unboxing of archival fonds or high-end digitisation of museum objects, it inevitably starts with an assessment of the objects to be digitised and their properties. Digitisation is not the same as cataloguing or documentation. It involves capturing key properties of the collection objects involved so that they can be represented digitally. This can be done in a variety of levels, up to a digital facsimile or digital twin.

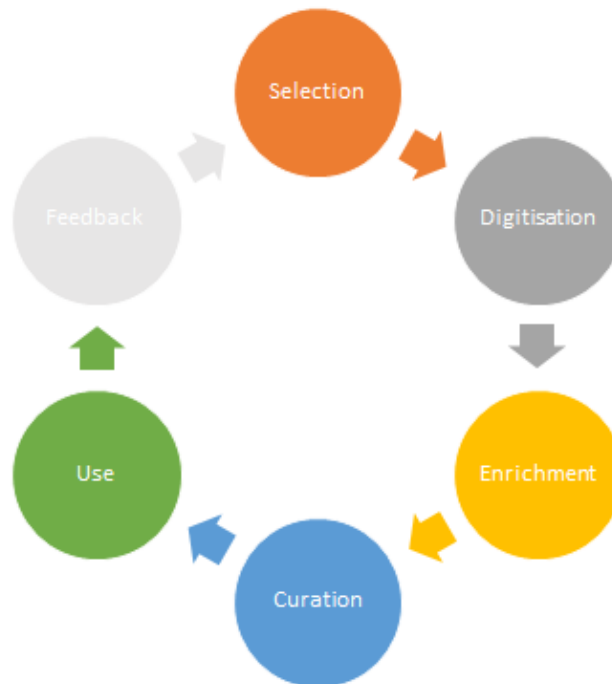


Fig. 5. Digitisation workflow steps (Fred Truyen 2020, CC-BY).

Typically, a **digitisation plan** covers different steps of the process: it often starts with a careful **selection** of the collections to be digitised, depending on institutional priorities, but sometimes driven by project funding or user requests, e.g. for research. From the selected objects collection come the **digitisation requirements**, defining the technical specifications. There are several standards that can be used to adhere to for the actual digitisation process: the US [FADGI guidelines](#) e.g., the [Metamorfoze standard](#).

Next is the description of the objects, and **metadata enrichment**.⁶⁴ What is important here is to highlight that online publishing of digital collections offers the possibility to integrate data from different provenance into aggregated, virtual collections, across institutional boundaries, whether they are a gallery, library, archive or museum data: it all comes together online.⁶⁵ The emergence of aggregated collections such as the [DPLA](#) and [Europeana](#) adds a new dimension to the use and reuse of digitised cultural assets and offers avenues for cross-institutional curation and storytelling, as well as for new [educational](#) and [research](#) approaches.

Traditionally, **curation activities** fall beyond the scope of a digitisation plan, but we see more and more that these activities become linked, as more and more the digital collections are published online, which involves digital curation, storytelling and editorial planning. Many digitisation projects showcase their results immediately in online exhibitions. For this, Europeana offers the **Publishing Framework**, setting quality standards for online collections.

This possible variety of digitisation levels requires a strategic vision on what the fits, ultimate and derived goals of the digitisation efforts are supposed to be. Are you digitising for online publishing, or for digital preservation, or both? Is the digitisation effort confined to one project or is it meant to be an integral part of the core functions of the institution? As many digitisation efforts are funded on a project basis, there is a real danger to focus the digitisation requirements solely on the project goals, and not on the “afterlife” of the digital collection.

In larger organisations, different departments could have competing digitisation needs, e.g. there could be a need for digital preservation of fragile objects, while at the same time the marketing department wants attractive representations of top items for a multitude of media deliveries. At the same time, the research department might be doing multispectral imaging. There is not really a one-size-fits-all approach, but it is certainly advisable to have an institutional alignment of basic digital processes, which could be quite elementary but important things such as file naming conventions, implementation of common standards, a catalogue of file types and their supporting software etc.

It would lead us too far to go into the details as these might seriously differ given the nature of the collections involved, but the key insight we need to share here is that digital (ICT) processes are about control, and that one has to develop a vision on how digital copies will become **digital assets**

⁶⁴ [Spectrum](#) is generally used in the museum sector in Europe, in some cases complemented with [CIDOC-CRM](#), while [CDWA](#) is used in the US. In the world of archives [ISAD\(G\)](#) offers standardized descriptions. For metadata exchange, specific standards such as [LIDO](#) for museum and heritage objects, [EAD](#) for archival objects and [MARC XML](#) for library objects are used. Some metadata exchange standards such as LIDO and [EDM](#) support Linked Open Data references to controlled vocabularies (e.g. AAT) and authority files (e.g. VIAF). For archives the Records in Context ontology ([RiC-O](#)) is in full development, while [BIBFRAME](#) will follow up the MARC standard as the future of bibliographic description standard, both on the web, and in the broader networked world that is grounded in Linked Data techniques. To deliver specific [linked data](#) vocabularies, [SKOS](#) can be used. Specific thesauri and vocabularies can be implemented into the descriptive metadata to describe the contents in a standard way, such as [Getty AAT](#), [Iconclass](#), [SEPIADES](#). In essence, descriptive data need to be structured in such a way that they allow for meaningful information exchange and mutual enrichment.

⁶⁵ David Farneth, “How Can We Achieve GLAM? Understanding and Overcoming the Challenges to Integrating Metadata across Museums, Archives, and Libraries: Part 2,” *Cataloging & Classification Quarterly* 54, no. 5–6 (August 17, 2016): 292–304, <https://doi.org/10.1080/01639374.2016.1192078>.

for the organisation, allowing for future use and reuse. This is where the **digital master** comes in: the digital master file which will allow multiple derived products.

The range of applications in which a digital copy of an object can appear is quite broad and ever-expanding. From an illustrative image in the catalogue system, to high-end images in a preservation system, multispectral RTI images for research to images tailored for social media and web communications and others for print. All these images might require specialised supporting software and are often kept in separate databases, each having its own life-cycle and corresponding management. On the other hand, we see a growing trend of **information integration**: with the increasing development of participatory practices in CHIs, there is a growing interest to be able to trace the actual use and contextualisation of objects; e.g. to know in which exhibitions, with what curatorial context images have been used, where they have been published etc.

Our advice for the digitisation workflow consists of the following recommendations:

- **Develop an institutional digital strategy** that takes into account the needs of different departments and activities within the organisation, and that transcends the specific requirements of individual projects;
- This strategy should **align with external conformity and interoperability requirements** set by your regional/national context and/or international collaboration networks;
- The strategy should also form the basis of **internal conformity and interoperability requirements for individual projects**;
- A **public summary of this strategy should be published online**, to document the digital maturity of your organisation⁶⁶.

This digital strategy should be supported by **3 important actions**:

- A **capacity building framework**, in which the organisation reflects on what **capabilities** the individual employees should have - their **skills and competencies** - to be able to generate the required **capacity** - the ability to **perform** and deliver the desired outputs;
- A **Digital Asset Management**, to make sure the digital copies resulting from digitisation efforts become reusable assets that can support a multitude of organisational activities, ranging from online catalogues over virtual exhibitions to printed publications, user engagement, high-end visualisations. A sound Digital Asset Management makes sure that the digitised collections can be part of a **“Digital Proof” business model** for the CH operations, allowing to explore new revenue streams that require a stronger online presence;
- An integrated **Digital Life-Cycle Management**, so that not only the digital copies remain up-to-date but also the supporting software and databases. This will guarantee the **sustainability** of the digitisation efforts.

⁶⁶ See e.g. the Case cards at Future Museum:

https://www.future-museum.com/wp-content/uploads/2021/06/Case-Cards_Which-digital-strategies-make-sense-in-a-museum-and-how-can-they-enhance-analogue-formats.pdf, the SPK Digitisation Strategy:

<https://www.preussischer-kulturbesitz.de/priorities/digitization/digitization-strategy.html?L=1>, and the Digital Strategy of the National Portrait Gallery:

https://www.npg.org.uk/assets/files/pdf/strategic-plan/NPG_Digital_Strategy_Digest_v4_1.pdf

This way, the Digital Strategy of the institutions can help CHIs to develop a business model that is adapted to the Digital Single Market while pursuing non-for-profit, for benefit societal impact goals. Read more about this in section 5.3.4. on Value Chains in the Digital Single Market.

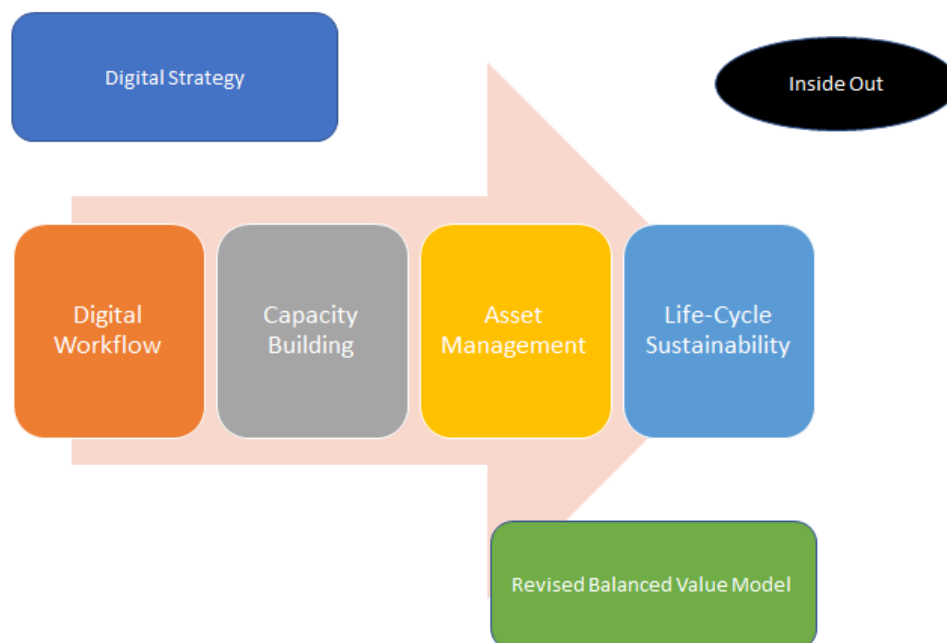


Fig. 6. Digital strategy - inside out (Fred Truyen 2020, CC-BY)⁶⁷.

To improve typical inside-out digital strategies, it is important to complement the digital workflow with the necessary capacity building efforts to train staff in their new roles, and make sure staff from different departments speak and understand the same “language” about the digital processes involved. Only when all relevant uses and usage contexts of the digital copies are understood, well defined and represented in the information system can they become assets to fulfil the institutional goals and societal needs. Making sure the underlying digital processes are sustainable over time also requires insight into the life-cycle management of the infrastructure and tools. This way the digital processes can form the basis for a balanced value model for the institution, as discussed in 5.3.3.

Participatory model: Outside-in

Due to the increased impact of social media on the workings of heritage institutions that publish their contents online, it is no longer sufficient to plan a digital strategy starting from the collections. When moving to richer online experiences such as virtual exhibitions and deeper, more meaningful interactions with the online audiences, e.g. in the case of crowdsourcing⁶⁸ and citizen science, the outside pressure on curation choices and decisions is mounting.

⁶⁷ See Rasa Bočytė et al., “Indicators, Participatory Practices and Self-Assessment in CHI Digital Transformation,” accessed July 22, 2021, <https://hcommons.org/deposits/item/hc:40631/>.

⁶⁸ See an overview of crowdsourcing in the Europeana context: Davies, Robert. (2020). Crowdsourcing in cultural heritage (Final). Zenodo. <https://doi.org/10.5281/zenodo.5244792>.

When we look at digitisation starting from the requirements of a co-creation workflow, we need quite a different model. The requirements will now not be set by the properties of the objects and the wishes of the curators, but by the intended user community. It is this community of stakeholders that will influence the selection of to-be-digitised collections, and the properties of interest that need to be digitally captured. The subsequent metadata enrichment can involve crowdsourcing, and often uses established thesauri. In recent projects we see how communities can already become involved in the development of metadata definition and hence the enrichment of the used thesauri themselves, as was e.g. done in the Europeana Migration project.

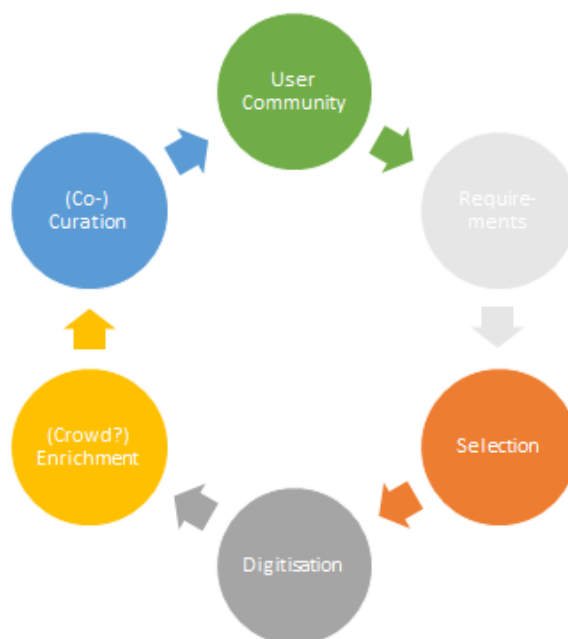


Fig. 7. Outside-in digital workflow steps (Fred Truyen 2020, CC-BY).

This means that the institutions need to rethink capacity building to include representatives of user communities as well as their own staff. **Empowering community participation** in the digitisation and/or metadata enrichment effort will not only save time and resources, as is often the case in crowdsourcing projects, but make sure the digital collections capture better how the objects have meaning for the community that actually makes sure that these collection objects are heritage in the first place. Enabling communities to take up the role of **patrons or caretakers** of their heritage by offering them the digital tools to do so might be the most sustainable way forward for CHIs. This adds a dimension of **community management** to the digital strategy, complementing the asset management. It is also a fundamental ingredient of any approach that wants to go beyond mere life-cycle management of the digital solutions to be able to further the **sustainable development** of the collections.

Our advice for the **participation workflow** consists of the following recommendations:

- Design a coherent, cross-department digital **co-creation workflow** for online participation. This involves dimensions of intellectual property rights, but also concerns privacy (e.g.

conformance to the European GDPR regulation and FAIR practices) and issues of diversity and inclusivity;

- Make sure your digital environment **empowers participants** and enables stakeholders to have a voice. Conceive your training efforts and capacity building to include interested members of the public. Do not only educate the public *about* the collections but also educate them to become *caretakers* of their heritage;
- Implement strong online **community management** involving principles of fairness, inclusivity, and democratic decision-making. Publish and maintain a **code of conduct**;
- Embed your digital strategy in the pursuit of **sustainable development goals**;
- Monitor and measure your **impact**.

This way, digital tools are not only used to make digital copies of objects available in the collection but are really used for what they are good at: connecting people and communities, streamlining communications, and empowering users to take control. It also totally transforms the traditional role of patronage into a community based, sustainable model which goes beyond digital access to foster community caretaking and guardianship of their heritage.



Fig. 8. Participatory model - outside in (Fred Truyen 2020, CC-BY).

When looking back at the digital workflow starting from the user community perspective instead of the collections - in line with the culture 3.0 concept explained in 5.1.3, it becomes clear that the workflow should integrate co-curation and co-creation facilities, to allow the users to actually engage with the collections from the very start of the process. This also affects our views on capacity building: it is not only necessary to train the staff, but also to educate the audience. This way, the stakeholder communities who actually define past objects as being “heritage” become empowered to contribute to the preservation and dissemination. Implementing procedures to facilitate

co-curation and co-creation requires specific community management. By incorporating community management one becomes more capable as a heritage institution to contribute to sustainable development goals.

5.4.4. How to build an innovation strategy with a purpose?

Strategy is a red-line to follow along with all big or everyday decisions. It is a clear vision, maybe even a dream, of where to go, helping to prioritise staff efforts and budgets. A strategy is a commitment to a set of policies and lines of action aimed at achieving a specific objective. Good strategies clarify objectives and priorities and help focus efforts around them.⁶⁹ If the CHI has an existing global strategy, it must be either considered as the framework within which to operate or be questioned, so that consistency with the innovation strategy is ensured.

A good basis of a digitisation project:

What you need	IPRs knowledge	Collection knowledge	A communicative passion	Creativity and a touch of know how
Actions to be done	Digging for concerned IPRs and artwork treasures		Content creation	
Results	Diverse online projects highlighting the CHIs specificities and its collections			

As much as possible, we recommend that the innovation strategy is built as an open process, involving the team and board members, - and ideally the target communities - to obtain the necessary creativity, support and effectiveness.

Here is a list of questions to guide your team toward a tailored strategy :

- Why do we need/ want to go online?
- What are our specificities?
- What do our usual audience and partners like and don't like about us?
- Who are our visitors? Who is not coming?
- Who are our team members? What skills and passions do they have?
- Where is our CHI: neighbours, society/ town/ community-specific stakes and appeals?
- What projects inspire us?
- What impact do we want to create and for whom?

When turning the first ideas into projects, we recommend to focus on SMART objectives (Specific, Measurable, Accessible, Realistic, Timed) and to think right away about the indicators that may help follow the success or not of each project: numbers of followers on social media channels? Evolution of the visitors: number, profiles? Number of articles / communication about the CHIs, but also satisfaction of the visitors, quality of the interactions during specific events, and so on.

⁶⁹ Pisano, G. P. (2015). You need an Innovation Strategy. *Harvard Business Review*. Retrieved from <https://hbr.org/2015/06/you-need-an-innovation-strategy>

To finish, innovation is iterative: it is a never ending process of curiosity, experimentation, evaluation and renewal (Figure 9)⁷⁰. Enjoy!

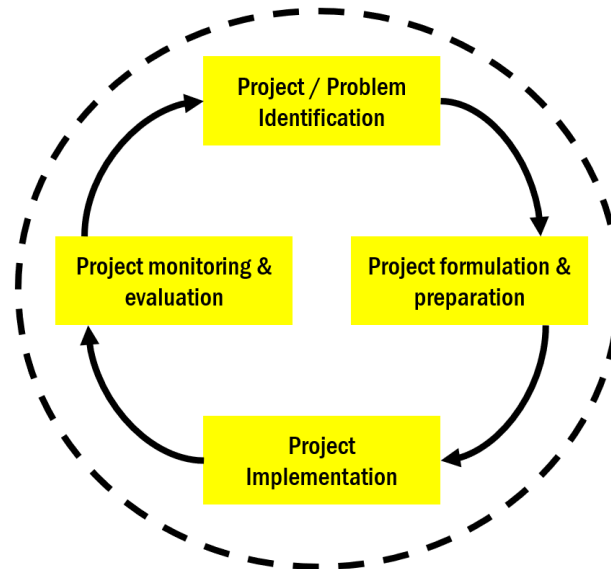


Fig. 9. Iterative process of innovation.⁷¹

Innovation is described as an open and iterative process also by Fagerberg⁷², who has built a model (Figure 10) in which the dynamics, the processes and policy that shape the innovation system are described. In the model, the output of the innovation system is defined as “technological dynamics” and five influencing external processes are identified: knowledge, skills, demand, finance, and institutions. In Figure 10, solid arrows indicate the influences of the five processes on the technological dynamics, while dotted arrows show the potential feedback that can arise. For example, negative or positive feedback could decrease or increase the demand for certain types of skills. Also Kline and Rosenberg⁷³ describe innovation not as a linear model, but as a process characterized by many feedbacks and loops that can lead to a re-evaluation of earlier steps. The five processes are also influenced by other elements, indicated in Figure 10, by the policy component. In this respect, openness to new concepts and solutions is crucial for innovative projects⁷⁴: organisations that are open to the feedback given by the external environments do not fall in the

⁷⁰ Pellegrin-Boucher, E., & Roy, E. (2019). Innovation in the Cultural and Creative Industries. Volume 8. Retrieved from <https://www.wiley.com/en-us/Innovation+in+the+Cultural+and+Creative+Industries-p-9781786303790>.

⁷¹ Figure inspired by the Project Cycle Management workshop (May 2018) by Shon McDonald : <https://slideplayer.com/slide/15010421/>

⁷² Fagerberg, J. (2018). Mission (in)possible? The role of innovation (and innovation policy) in supporting structural change and sustainability transitions. TIK Working Papers on Innovation Studies. No. 20180216. University of Oslo. Retrieved from https://www.sv.uio.no/tik/InnoWP/tik_working_paper_20180216.pdf.

⁷³ Kline, S. J., & Rosenberg, N. (1986). An Overview of Innovation. In R. Landau, and N. Rosenberg, (Eds.), *The Positive Sum Strategy: Harnessing Technology for Economic Growth* (pp. 275-304). Washington, DC: The National Academies Press. <https://doi.org/10.17226/612>.

⁷⁴ Fagerberg, J. (2004). Innovation: A Guide to the Literature. In J. Fagerberg, D. Mowery, and R. Nelson (Eds.), *The Oxford Handbook of Innovation* (pp. 1-26). <http://dx.doi.org/10.1093/oxfordhb/9780199286805.003.0001>.

trap of being “locked out” from potential promising and successful ideas. In fact, organisations cannot be innovative if isolated, they need to largely interact with the environment in which they operate. Also Cohen and Levinthal⁷⁵ underline these concepts, defining “absorptive capacity” as the ability of an innovative organisation to absorb outside knowledge and ideas.

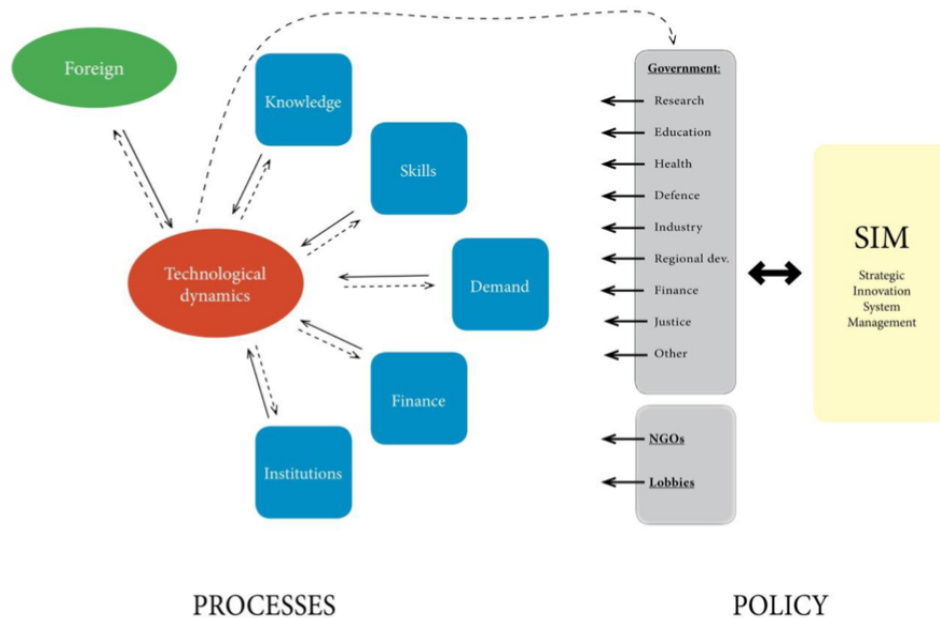


Fig.10. The National Innovation System: Dynamics, processes and policy (Fagerberg, 2018).

5.4.5. Success factors for innovation

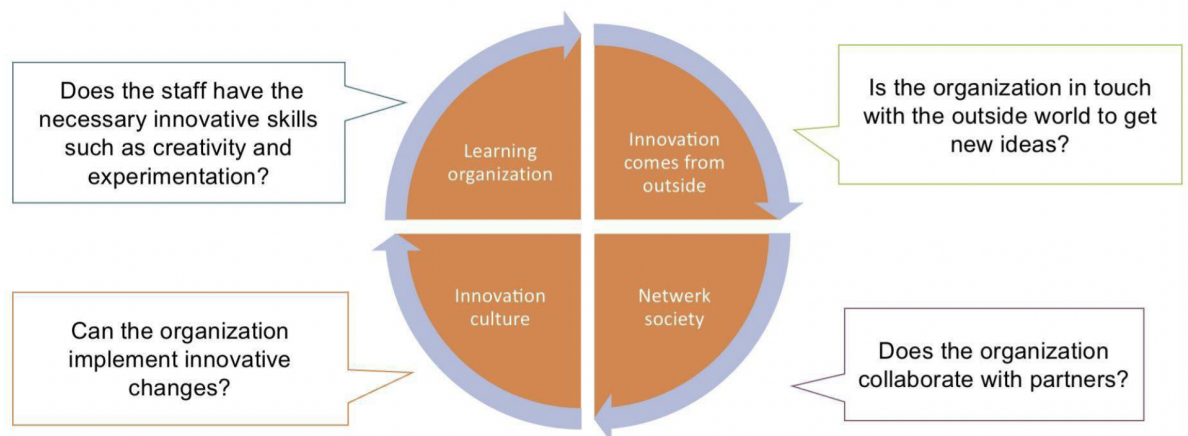


Fig. 11. Success factors for innovation (DEN Academy Leadership Program, 2021⁷⁶).

⁷⁵ Cohen, W. M., & Levinthal, D.A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35, 128-152. <https://doi.org/10.2307/2393553>.

⁷⁶ DEN Academy Leadership Program. (2021). *Digital Strategy and Innovation. Visual Report Module 1-2. Making the most of the (digitally) networked society* [PowerPoint slides].

The innovation strategy described above can be achieved and benchmarked following four success factors for innovation (Figure 11):

- Learning organisation. Being a learning organisation means creating a context where the staff can develop the necessary innovative skills. This is made possible by implementing a participatory environment where knowledge sharing is fostered and by allocating a budget for training.
- Innovation culture. Having a culture of innovation means being ready, as an organisation, to plan ahead and, at the same time, have the agility to implement innovative changes. This means that the organisation allocates a budget for innovative projects, it can take risks and it is responsive to the external environment.
- Innovation comes from outside. An organisation needs to conduct a structural and systematic futuring and trendwatching of the outside world in order to get new perspectives on chances and opportunities for digital innovation. For example, this means to be updated on policy trends at the EU level, and to work with trend radar as an instrument to effectively relate the organisation to future perspectives and trends. A methodical trendwatching enhances to spot developments that have the potential to be game changers on time; to grow the capability to see patterns in the adoption of technologies; to inspire new strategies and directions for the organisation; and to have a constructive conversation on the future of the organisation.
 - “Futuring”: generating insights about the future in a methodical way to enhance present-day choices. The trends that are reasoned into images of futures can be divided into four categories: possible (might happen), plausible (could happen), probable (likely to happen), and preferred (want to happen).
 - “Trend watching”: generating continuous, methodical insights into deviations from “the normal”. These deviations can be emerging or disappearing and can be classified as: DESTEP (Demographic, Economic, Cultural, Technological, Ecological and Political/Legal), VUCA (Volatile, Uncertain, Complex, Ambigu), or Technology specific (social, mobile, analytics, cloud).
- Network society. Organisational networks are relatively stable cooperative relationships between organisations based on horizontal rather than hierarchical coordination, recognizing one or more network or collective goals. Networks, in order to be so, need six elements: actors, connections, knowledge, informal network, differentiation (very different organisations) and integration (cohesion in the network). Networks enable organisations to share and develop specific knowledge and skills, to have access to capital and other resources, and to face complex challenges, realizing outcomes which none of them can realise on their own.

6. Conclusions

With these guidelines, we offer CHIs a framework for managing their digital transformation. By identifying four action domains, we put forward dimensions that transcend the majority of current digitisation efforts and strategies, looking forward to future needs. We are convinced that the sector is at a fundamental crossroads, a tipping point, where it has to rethink its mission - often stemming from a 19th century context - in order to stay relevant and fulfil its mission in the current times.

In the highly connected digital society, a multitude of communities co-exist and define their own value systems. Traditional values are challenged through globalisation and migration, as well as the climate crisis and datafication of everyday life. The interest of contemporary European citizens can no longer be served by a cultural system that is deeply rooted in a concept of patronage, of “expert curation”, which decides what is heritage and what is not. New and evolving audiences are challenging established selection and curation practices. Iconic stalwarts of former generations are contested, histories rewritten and rediscovered.

For the caretakers and guardians of heritage in the CHIs, this means new ways need to be found in order to regain credibility and community support. Without this, the old funding and operational models will become increasingly under pressure, and might prove unsustainable.

We hope that these guidelines can help to build future-proof strategies that enable the development of new value chains, based on open, participatory processes.

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